DOCUMENT RESUME

ED 024 347 24 HE 000 149

By-McKeachie, W.J.; And Others
Research on the Characteristics of Effective Teaching. Final Report.
Michigan Univ., Ann Arbor.

Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.
Bureau No-BR-5-0784
Pub Date Aug 68
Grant-OEG-4-10-001
Note-820p.
EDRS Price MF-$3.00 HC-$41.10
Descriptors-*Academic Achievement, Behavior, *Classroom Environment, Dropouts, Environment, *Higher Education, Learning, Students, *Student Teacher Relationship, *Teaching Methods

In studies of what teaching styles are effective for particular types of students, it was found that (1) students having a great need for affiliation performed better in classes taught by friendly teachers, while students needing little affiliation performed better in classes taught by more impersonal teachers. (2) A student's need for achievement did not predict nor interact with an instructor's emphasis on achievement in affecting achievement, but his did predict course choices. (3) The more instrumental grades were considered for career success, the better the grades of success-motivated students and the poorer the grades of failure-motivated students. (4) A cooperative classroom atmosphere produced less tension and greater student satisfaction than a competitive one. (5) Dropouts are characterized by a sense of powerlessness and a high need for freedom, power and excitement. (6) College psychology classes show similar developmental phases in the interactions of students and teachers. (7) Factor analyses of coded student and teacher acts and of student ratings of teaching revealed replicable dimensions of student and teacher behavior. (8) The development of criterion measures for the effectiveness of teaching and learning in psychology has included a test of psychological thinking , scales of cognitive structure, judgments of personality from films, attitudinal measures, and student and observer rating forms. "Whatever the pattern of their development, there is a natural history to classrooms and only slowly ...do human groups come to coordinate their goals, agree upon procedures, and find ways to respond to the various affects and pressures generated by the process of moving toward their various task goals." (Author/JS)

BR-5-0784
PA-24

#173

ED0 24541

FINAL REPORT

Project No. 05950
Grant No. OE-4-10-001

Research on the Characteristics of Effective Teaching

August 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

ERIC

HE 000 149

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

FINAL REPORT

Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

W.J. McKeachie, John W. Milholland, Richard Mann,
Robert Isaacson

The University of Michigan

Ann Arbor, Michigan

August, 1968

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

Part One

Section I	Summary and Preface
Section I	Student Characteristics, Learning, and Academic Choices

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

Contents

(Pages within sections are separately numbered.
The section number appears on each page.)

Section	Title	Authors
I.	Introduction	
I-1.	Summary	W.J. McKeachie
I-2.	Preface	W.J. McKeachie
II.	Student Characteristics, Learning and Academic Choices	
II-1.	Relation between n Achievement, test anxiety and curricular choices, reprinted from *Journal of Abnormal and Social Psychology*, Vol. 68, No. 4, April 1964.	R.L. Isaacson
II-2.	Course Selection as Affected By Achievement Motivation, Test Anxiety, and Perceived Course Difficulty	Dale J. Helland R.L. Isaacson
II-3.	Achievement-Related Motivation and Perceived Instrumentality of Grades to Future Career Success	R.L. Isaacson Joel E. Raynor
II-4.	The Functional Significance of Future Goals	Joel E. Raynor
II-5.	The Relationship Between Student Expectations and Performance in an Introductory Psychology Course	Robert Rosenwein
II-6.	Student Achievement Motives, Achievement Cues, and Academic Achievement, reprinted from *Journal of Consulting and Clinical Psychology*, 1968, Vol. 32, No. 1, 26-29.	W.J. McKeachie R.L. Isaacson J.E. Milholland Y.G. Lin
II-7.	Student Affiliation Motives, Teacher Warmth, and Academic Achievement, reprinted from the *Journal of Personality and Social Psychology*, 1966, Vol. 4, No. 4, 457-461.	W.J. McKeachie Y.G. Lin J.E. Milholland R.L. Isaacson
II-8.	The Interaction of Achievement Cues and Facilitating Anxiety in the Achievement of Women	W.J. McKeachie
II-9.	Interactions Between Student Anxiety and Teacher Produced Anxiety Cues	Robert Stakenas J.E. Milholland

Section	Title	Authors
II-10.	Student Characteristics Related to Achievement in Elementary French, Mathematics and Psychology Courses	Y.G. Lin W.J. McKeachie
II-11.	Student Characteristics and Development	Donald R. Brown
II-12.	The Results of an Attempt to Match Students and Teachers for Effective Performance	J.E. Milholland K. Swaminathan
II-13.	The College Dropout: A Study in Self-Definition	Stanton Samenow
II-14.	Evaluative Stress, Fear of Failure, and Academic Achievement	Robert Stakenas
III.	Teachers, Teaching Methods and Effectiveness	
III-1.	Dimensions of Student Evaluations of Teaching, reprinted from the Journal of Educational Psychology, 1964, Vol. 55, No. 6, 344-351.	R.L. Isaacson W.J. McKeachie J.E. Milholland Y.G. Lin Margaret Hofeller James Baerwaldt Karl Zinn
III-2.	Student Evaluations of Recitation Sections in Beginning Economics	R.L. Isaacson
III-3.	Further Study of Dimensions of Student Evaluations (Factor Analysis of Means)	Y.G. Lin W.J. McKeachie
III-4.	Sex, Motives, Intelligence and Teacher Evaluations	R.L. Isaacson
III-5.	Apportionment of Merit among Classroom Factors	R.L. Isaacson
III-6.	Student Ratings of Teacher Effectiveness	W.J. McKeachie
III-7.	Observer and Student Perceptions of Teaching Behavior in French, Mathematics, and Psychology Classes	Y.G. Lin W.J. McKeachie
III-8.	Personality, Sex, Subject Matter and Student Ratings, reprinted from The Psychological Record, 1966, Vol. 16, 137-144.	Richard E. Carney W.J. McKeachie
III-9.	Cooperative versus Competitive Discussion Methods in Teaching Introductory Psychology reprinted from the Journal of Educational Psychology, 1967, Vol. 58, No. 6, 386-390.	Donald B. Haines W.J. McKeachie

Section	Title	Authors
	III-10. Sex of Instructor and Student Performance	W.J. McKeachie Wendy House
IV.	Evaluation of Learning and Teaching	
	IV-1. Additional Work with the Criteria Test	J.E. Milholland Denis Carville
	IV-2. A Study of the Items of the Introductory Psychology Criteria Test in Light of a Validation Procedure	Karl Zinn J.E. Milholland
	IV-3. Personality and Situational Factors in Attitude Change	Krishna Swaminathan
	IV-4. The Relationship between Student-Teacher Compatibility of Cognitive Structure and Student Performance	Y.G. Lin W.J. McKeachie
	IV-4a. The Effects of Perceptual Factors on the Index of Co-linearity	M. Wernander W.J. McKeachie
	IV-5. Ability to Judge Personality Before and After Taking an Elementary Psychology Course	C. Kimeldorf J.E. Milholland
	IV-6. The Teacher Q-Sort	A. Rickfelder B. Brown J.E. Milholland
	IV-7. Student Papers as Evidence of Learning	A. Rickfelder B. Brown
	IV-8. Course Grades in Psychology 101	B. Stock J.E. Milholland
V.	New Perspectives on College Teaching (BOOK)	Mann, et al.
	V-1. The Study of Affect in Classroom Interaction	Richard Mann Robert Rosenwein
	V-2. Dimensions of Teacher and Student Activity	Steve Arnold
	V-3. Case Study of the Developing Classroom	Jeff Binder
	V-4. Variations Among Students	Barbara Ringwald
	V-5. Teacher-As Typology	Solomon Cytrynbaum
	V-6. Case Study of Teacher Strategy and Teacher Responses	Barbara Newman
	V-7. The Natural History of the Classroom	Steve Arnold
	V-8. Process of Learning to Work.	Richard Mann

Part I

I-1 Summary

The research supported on Contract OE No. SAE-8451 has centered on the general theme of the interactions of teacher and student characteristics affecting effectiveness of college teaching and learning. While there have been many studies of teaching methods and many studies of student characteristics affecting learning, we believe that increased understanding can result from the simultaneous investigation of the interactions of teaching methods and student characteristics.

Our research supports this contention, for we have found significant interactions consistently between student need for affiliation and teacher warmth. Students high in n Affiliation perform better in classes of high warmth.

Results with the TAT measure of n Achievement have not been similarly encouraging with respect to interaction with teacher cues in affecting classroom achievement. But n Achievement does predict student choices. As predicted students high in hope of success (high n Ach; low test anxiety) tend to choose courses and major fields of intermediate difficulty; fear of failure students choose those fields that are either very difficult or easy.

Use of the theory we had developed from our mixture of success and failure in the study of Achievement enabled us to predict interaction between fear of failure, perceived instrumentality of grades, and grades received in courses in psychology and economics. Among three categories of perception of the instrumentality of course grades to career success, the higher the perception of instrumentality, the better the grades of success motivated students and the poorer the grades of fear of failure (high anxiety) students. These studies indicate that in the use of measures of achievement motivation in field situations, such as studies of college achievement, attention must be given to the instrumentality of achievement on the task being studied to long term goals and to the subject's estimate of the probability of success.

In pursuing interactions we have also gathered data relevant to more traditional research approaches. For example Part II of this report not only includes studies of the interaction of student characteristics and teaching styles but also some new studies on the main effects of certain student characteristics on academic performance and academic choices. The CIP was found to contribute significantly beyond intelligence measures to the prediction of grades. Of particular interest was our finding that the CPI Socialization scale predicts grades among students already highly selected for intelligence. In the complementary tradition of teaching methods research a well-controlled study of teaching methods stressing cooperation or competition revealed that as compared with competition, cooperation resulted in less tension, better recitation performance, and greater student satisfaction.

In addition to the collection of additional research data and extension of our theory of teaching and learning, we proposed in 1963 to conduct a study of the feasibility of matching students and teachers to produce maximal learning. Our research in this area indicated that we are far from the point where computers can assign students to teachers with assurance of effective teaching-learning. (We suspect that such an application of our findings might not be advisable even if we had obtained positive results.)

From the middle-level approach of studying student motives, teacher cues, and achievement, our work has gone in two directions--one more molar, one more molecular.

On the molar side we have been interested in learning more about students in general and where our classes fit into the general expectations of students about college and student development. We participated in a study of college student development directed by Donald Brown and a study of drop-outs undertaken by Stanton Samenow. Brown's data suggest that freshmen expectations about college, while in tune with the University's goals, may be unrealistically idealistic. Some of the reactions of students seen in the classes we study thus may stem in part from general reactions to the realities of the university. The sense of powerlessness, need for freedom, and drive for excitement felt by many students to some degree are revealed in a more extreme form in the drop-outs studied by Samenow.

On the more molecular side is the intensive study of a small number of classes by Mann and his colleagues. The earlier studies in this series are reported in the book, Interpersonal Styles and Group Development, Wiley, 1967 and the later studies in Part V of this report. A book based on this section, tentatively titled New Perspectives on College Teaching will also be published by Wiley. In the classes described in these books every act of each teacher and student was categorized. Two category systems were used--one scoring the affective tone of the act; the other according to the teacher or student role represented. These studies are, we believe, unusual in their synthesis of a detailed clinical case history approach to understanding what teachers and students do in the classroom with the use of categorization, factor analysis, and quantification.

With this approach one has an enormous number of acts but a small N of classes. Even with only four classes, however, the data persuasively suggest that there are certain developmental trends in student-teacher interactions during a term that are common in Michigan psychology classes. The early class sessions are marked by Warmth, Apprehension, and Role Dissatisfaction on the part of the teacher and Contention, Support, and Exhibition on the part of students. After the early class periods teachers become more punitive and students become discouraged and anxiously dependent. After about five weeks, more or less, students move into a more constructive phase of Enactment which is followed by a phase in which the teacher lectures more and becomes more satisfied with his role while students consent to a more passive role. As the teacher continues to lecture he begins relaxing from a "Formal Authority" to a more collegial relationship with his students. His students respond with another increase in Enactment, i.e., a period in which students contribute their ideas and experience. Finally a separation phase occurs in which there is a tendency toward withdrawal, a growth in the teacher's Role Dissatisfaction, reflecting unrealized goals, and a rise in Warmth and Display. Had these teachers known that many of the problems they faced were normal problems of class development their anxiety and apprehension might well have been more tolerable.

During each of these developmental phases the reactions of different groups of students differ. In Part V we attempt to describe the behavior and affective reactions of differing types of students during the successive phases of development of the class. By intensive analyses of two classes over the period of a term and of a single critical class period we try to communicate the complexity of teacher-student interactions. The general theme of this group of studies is that one can gain understanding of the developing student-teacher relationship by considering the interplay between the task functions of college teaching (achieving educational goals) and the emotional reactions and strategies characteristic of all human interactions.

In any project of this scope in a relatively unresearched area much of the effort (and perhaps a major part of the contribution) is methodological. In our 1963 proposal we indicated that we would do further work on measures and methodology. As indicated, our most important and unique methodological contributions are probably found in Part V, the detailed study of the development of four classes. Here we describe the "Member Teacher Scoring System" designed by Mann to categorize student and teacher acts in terms of the affective states which arouse and color behavior. A factor analysis of teacher and student acts resulted in seven teacher factors and seven student factors. They were:

Teacher Factors

1. Reaction-Proaction
2. Role satisfaction-Role dissatisfaction
3. Collegiality-Formality
4. Punitiveness-Low Punitiveness
5. Apprehension
6. Display
7. Warmth

Student Factors

1. Enactment-Anxious Dependence
2. Consent-Contention
3. Concealment
4. Discouragement
5. Challenge
6. Support
7. Exhibition

Another approach to categorization of teacher-student behaviors is the "Teacher As...." typology which analyzes teacher functions in terms

of the teacher as 1. Expert
2. Formal Authority
3. Socializing Agent
4. Facilitator
5. Ego ideal
6. Person

While undertaking these new approaches to dimensions of teacher and student behavior we have also continued our research on student ratings of teachers. As reported in Part III factors derived from items drawn from all faculty rating scales we could amass were found to be replicable. These factors, first identified in our earlier project, were further studied in the present project. A methodological check was to factor analyze correlations between the mean ratings given teachers by their students so that the factors would describe covariation in teacher behaviors and not covariation in student perceptions of a single teacher. The results indicated fair agreement between the results of this factor analysis and the earlier analyses, and a factor analysis of ratings of economics instrucotrs also revealed factors similar to those previously identified. Application of Q sort methodology also revealed similar factors, but promises to add something beyond rating scale methods.

In connection with these studies of teacher characteristics we also uncovered complex interaction effects between sex of instructor, student intelligence and achievement, and student achievement orientation, sex of student, subject matter and student ratings of instructors.

One of our continuing methodological problems has been to identify student characteristics useful in research on teaching and learning we have used a variety of tests of various personality traits--Gough's California Psychological Inventory, Cattell's 16 PF test, Fricke's Opinion, Attitude and Interest Survey, the Alpert-Haber Achievement Anxiety Scale, TAT measures of motivation and ACE and College Board measures of ability. In chapter V-4 we describe our effort to use our own data to identify clusters of students who reach differently in the classroom. The use of these clusters in interpreting the data from our developmental studies of college classes suggests that this approach may be more profitable than our earlier forays.

Our ultimate methodological concern is about the criteria of effective teaching and learning. Part IV describes the continued development of our Introductory Psychology Criteria Test, an attempt to measure the ability of students to think like psychologists in analyzing psychological research and examples of behavior. We also describe our continuing fruitless efforts to measure effects of teachers upon the structure of psychological thinking using Runkel's index of collinearity. Even further beyond typical measures of student learning was our use of films to test the impact of a psychology course upon students' ability to judge personality. And, to end on a positive note, our earlier defeats in the use of attitude scales have been reversed and we now have results indicating that attitude changes are useful criteria when interactions between teacher and student characteristics are studied.

Our final chapter discusses the implications of our research for college teaching. It is distilled not only from the research but from our experience in attempting to apply our findings to the training of graduate students for careers in college teaching. Our success in this application is unevaluated except for the high involvement of those in our program for training college teachers of psychology.

I - 2: Preface

In our proposal for this research we indicated that our basic goals would be to determine interactions of teacher and student characteristics in effective teaching-learning. As indicated in the Summary and the Table of Contents, this general theme has blossomed into a wide variety of studies, ranging from studies of student characteristics related to academic achievement to detailed moment to moment analysis of the emotional interactions of students and teachers during an entire semester.

Since many of the studies to be included in this report have been, or are about to be, published, the introduction, methods, findings, conclusions, and references are included in each chapter rather than in separate chapters as would be the case if we were reporting only one large study. Because the report as a whole is so lengthy we anticipate responding to requests for copies by mailing relevant chapters rather than the entire report.

Although this report is bulky, it does not include some of the lengthier products of our work. Most notable is the book, Mann, Richard D., Interpersonal Styles and Group Development, New York: Wiley, 1967. A second book by Mann, et al tenatively, is titled New Perspectives in College Teaching, and major portions of it are in Part V of this report.

The following chapters are reprinted from journals of the American Psychological Association:

II - 1: Isaacson, R.I, Relation between n Achievement, test anxiety, and curricular choices, Journal of abnormal and social Psychology, 1964, 68, 447-451.

II - 6: McKeachie, W.J., Isaacson, Robert L, Milholland, John E, Lin, Yi G., Student Achievement motives, achievement cues, and academic achievement, Journal of Counselling and Clinical Psychology, 1968, 32, 1, 26-29.

II - 7 McKeachie, Wilbert J., Lin, Yi G., Milholland, John E, Isaacson, Robert Student Affiliation Motives, Teacher Warmth, and Academic Achievement, Journal of Personality and Social Psychology, 1966, 4, 457-461.

III - 1 Isaacson, Robert L., McKeachie, W.J., Milholland, John E, Lin, Yi G., Hoffeller, Margaret, Baerwaldt, James W., Zinn, Karl L., Dimensions of Student Evaluations of Teaching, Journal of Educational Psychology, 1964, 55, 344-351.

III - 9 Haines, Donald Bruce, McKeachie, Wilbert J., Cooperative vs Competitive Discussion Methods in Teaching Introductory Psychology, Journal of Educational Psychology, 1967, 58, 386-390.

Permission to reproduce this copyrighted material has been granted by the American Psychological Association to the Educational Research Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce ERIC documents by means of microfiche or facsimile hard copy, but this right is not conferred to any user or ERIC materials. Reproduction by users of any copyrighted material contained in documents disseminated through the ERIC system requires permission of the copyright owner.

III - 8 Carney, R.I., and McKeachie, W.J., Personality, Sex, Subject Matter and Student Ratings, Psychological Record, 1966, 16, 137-144.

Is reproduced by permission of the Psychological Record.

Five doctoral dissertations have emerged and brief accounts are included herein. They are:

Hedegard, James, Student-Instructor Interaction and its Effects on Student Achievement and Attitudes.

Samenow, Stanton, The College Dropout: A Study in Self-Definition.

Stakenas, Robert, Evaluative Stress, Fear of Failure and Academic Achievement.

Swaminathan, Krishna, An Investigation of Change of Attitude of Students as Affected by the Interaction Between Classroom Affiliation and Achievement Cues and Affiliation and Achievement Scores.

Zinn, Karl, Validation of a Differential Test of Cognitive Objectives of the First Course in Psychology.

Reprinted from JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY, Vol. 68, No. 4, April 1964
Printed in U. S. A.

RELATION BETWEEN N ACHIEVEMENT, TEST ANXIETY, AND CURRICULAR CHOICES[1]

ROBERT L. ISAACSON

University of Michigan

A model of motivation proposed by Atkinson was considered appropriate for the generation of hypotheses about the curricular choices of college students. The selections of areas of concentration by honors and nonhonors students, tested as freshmen, were obtained when the students were seniors. Their choices were related to their n Achievement scores and Test Anxiety scores. The general predictions of the model were borne out for men but not for the women, although this was not unexpected. In regard to the choices of women it was noted that women in the honors program tended to obtain teaching certificates if they had high Test Anxiety scores.

Atkinson has proposed a model of choice behavior in which *latent motives, probability of goal attainment,* and the *incentive value of the goal* are differentiated at a theoretical and empirical level (Atkinson, 1958). In this model motivation toward a goal is a product of these three terms. In a situation where several courses of action are possible the choice among the possibilities is made on the basis of the motivation toward or away from each possible choice. "Latent motives" are measured by projective tests or objective self-report questionnaires. The "probability of goal attainment" refers to the subjective probability that a given course of action will result in the attainment of states relevant to broad motivational goals (i.e., success in competition with a standard of excellence or the avoidance of failure experiences), and is inferred most often from the structure of the experimental situation. The "incentive value of the goal" is defined as (1 — the probability of goal attainment). Tests of the model have been made in laboratory settings (see Atkinson, Bastian, Earl, & Litwin, 1960; Atkinson & Litwin, 1960).

There is no reason why tests of the model could not be made in a more "natural setting." Specifically, an examination was made of the patterns of choices of concentration areas of senior students for whom need for Achievement (n Ach; McClelland, Atkinson, Clark, & Lowell, 1953) and Test Anxiety (Mandler & Sarason, 1952) scores were obtained when they were freshmen. The difficulty levels of the different areas of concentration were estimated to provide a basis of prediction of curricular choices for the different motivational groups.

The model proposed by Atkinson predicts that people high in n Ach should prefer choices where the probability of goal attainment (P_s) is of intermediate value. This prediction stems from the fact that the resultant motivation for intermediate choices should be greatest at these points since it is a product of the probability of success (P_s) and the incentive value of the goal ($1 - P_s$). People high in n Ach should not make choices which are either too easy or too difficult because of the low resultant motivation associated with these extremes.

As an example, let us assume a set of possible concentration areas: A, B, and C. Let us also assume these programs differ in their perceived levels of difficulty. Let us assume that each student translates this order of difficulty into a probability of his own successful completion of the program (P_s). Students will have different degrees of motivation toward each program and these can be easily determined. For a hypothetical student who has the value of P_s given below, and assuming $M_s = 1$, we can calculate his motivation toward each program in the following manner:

Program	$P_s \times$	$I_s \times$	$M_s =$	Success Motivation
A	.2	.8	1 =	.16
B	.5	.5	1 =	.25
C	.8	.2	1 =	.16

---

[1] This research was supported in part by Office of Education Cooperative Research Contract SAE-8451.

Since the motivation toward Program B is greater than for any other program, the model predicts that the student in this example would elect Program B in preference to all others. Individuals whose behavior is determined by failure-avoidance motives should make quite a different choice in the same situation.

When confronted with a choice among the same set of courses, individuals motivated for success and those motivated to avoid failure would have equal but opposite resultant *motivation* for each program. The motivation for the three programs for a failure-dominated student is presented below.

Program	P_f	$\times I_f$	$\times M_{af}$	=	Failure-Avoidance Motivation
A	.8	−.2	1	=	−.16
B	.5	−.5	1	=	−.25
C	.2	−.8	1	=	−.16

The failure-dominated individual should elect either the most difficult program, A, or the least difficult program, C. He would avoid programs in the middle range of difficulty. Failure-avoidant students will either take programs where the chance of failure is remote *or* hard programs (Low P_s) in which the failing is not as painful because many other people will also fail.

If one assumes that the Test Anxiety score represents a latent motive to avoid failure (Atkinson & Litwin, 1960), then individuals with high Test Anxiety scores should elect extreme choices. They should avoid the middle range of difficulty which is associated with the greatest resultant negative motivation. Accordingly, they should pick the most difficult or least difficult tasks. This paper examines the curricular choices of some selected graduating seniors at the University of Michigan to determine if such patterns of choice could be found. Specifically, students who have greater n Ach scores than Test Anxiety scores should show a greater frequency of election of concentration areas of intermediate difficulty and students who have greater Test Anxiety scores than n Ach scores should be found to elect the most and least difficult areas of concentration.

METHOD

Subjects

Freshmen entering the University of Michigan are required to take a number of psychological tests which are administered under the supervision of the Evaluation and Examinations Division. In 1958 a sample of entering honors students and a sample of superior nonhonors students were given the Test of Insight developed by French (1958).[2] The students' written responses to 10 verbal descriptions of behavior were scored for n Ach following the procedure described by McClelland et al. (1953) by experienced judges who had demonstrated scoring reliabilities over .90 on earlier materials.[3] Form II of the French Insight test was used with different leadins for men and for women. The students were also given the Test Anxiety Questionnaire developed by Mandler and Sarason (1952). In 1962 it was possible to determine the fields of concentration for 108 men and 109 women of the original samples. In addition it was possible to determine the number of cases in which a student dropped out of the University of Michigan for reasons of poor academic performance.

For the purpose of this study all fields of concentration elected by students were collapsed into three categories: Difficult (Low P_s), intermediate difficulty (Intermediate P_s), and easy (High P_s).[4] For the women a separate category was established for those who earned a teaching certificate.

The classification of concentration areas into ordered degrees of difficulty was based on estimates of difficulty of specific courses in academic programs. Information was obtained from recent reports of the Evaluation and Examinations Division. From these reports it was possible to determine the average grades and the average brightness of the students found in certain courses as measured by tests in the freshmen batteries. It was assumed that the ratio of average grades to average brightness represented an index of the difficulty of the course. Departmental concentrate programs which had difficult, intermediate, or easy beginning courses, determined in this fashion, were assumed to have concentrate programs of comparable difficulty. In addition, the author obtained estimates from introductory psychology students as to how well they thought they could do scholastically in the programs which make up the three levels of difficulty. Students who had high grade-point averages responded without discrimination among three groups of departmental programs. For example, the brightest students responded that they could do well in any area. Students with average and low grade-point averages, however, responded in ways which indicated that the previously established order of difficulty was appropriate. These students estimated they could do best in the courses labeled "easy," and least well in courses labeled "difficult." The "intermediate" courses fell in the middle.

---

[2] At the University of Michigan the records of entering freshmen are examined before the beginning of the academic year and the most promising students are asked to come in for an interview with the director of the Honors Council. On the basis of the student's performances on objective tests, letters of recommendation, and the interview, the student may be invited to join the Honors program which is intended to provide the exceptional student with an opportunity to elect special honors classes and follow a more liberalized curriculum.

[3] The n Ach scoring was done by Willard Larkin (men) and Nancy Tucker (women).

[4] The names of the concentration programs which were labeled "difficult," "intermediate," and "easy" will be omitted to save pointless controversy. However, it might be added that they correspond fairly well to the student stereotypes of courses found in most colleges.

Only those students for whom n Ach scores and Test Anxiety scores were available and whose scholarly careers could be unequivocally determined were considered in the analysis. Despite careful checking, it was impossible to ascertain the academic progress of all those who took the tests as freshmen. Data about withdrawals will be presented for those who were known to have dropped out because of poor academic performances but not for those for whom the reasons for withdrawal from the University were in any way uncertain.

The distribution of n Ach scores and Test Anxiety scores was calculated separately for men and women. No differences were found for either sex in the mean of the raw n Ach or Test Anxiety scores of those in the honors program as compared with the sample of superior students. The motivational scores of each student were transformed into standard scores (*z* scores). Two new distributions (one for each sex) were obtained in which the differences between the *z*-score transformations of the n Ach scores and the *z*-score transformations of the Test Anxiety scores were ordered. These new distributions were used as the bases for all further analyses. Individuals who have a positive difference score in these distributions represent individuals for whom the positive motive toward achievement is greater than the negative, failure-avoidance, motivation reflected by the Test Anxiety score. It will be assumed, along with Atkinson and Litwin (1960), that Test Anxiety scores reflect a motive to avoid failure.

RESULTS AND DISCUSSION

Figure 1 presents the distribution of men in the honors and nonhonors groups falling above

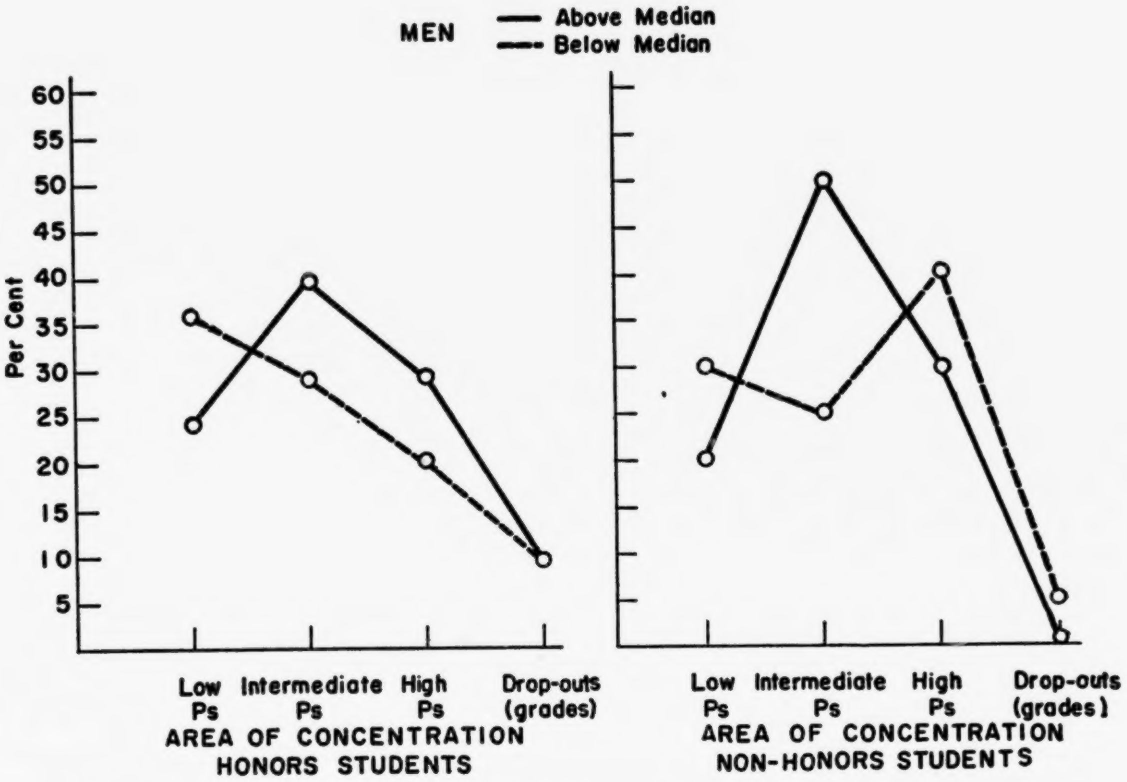


FIG. 1. The percentage of men above (achievement group) and below (failure-avoidance group) the median of the distribution of the differences between the transformed n Ach and Test Anxiety scores concentrating in Low, Intermediate, and High P_s areas. (Also shown is the percentage of each motivational group withdrawing from college because of poor grades. The left-hand portion of the figure describes the choices of men in the honors program while the right-hand portion describes the choices of men not in the honors program. The *N* of honors students = 68; *N* of nonhonors students = 40.)

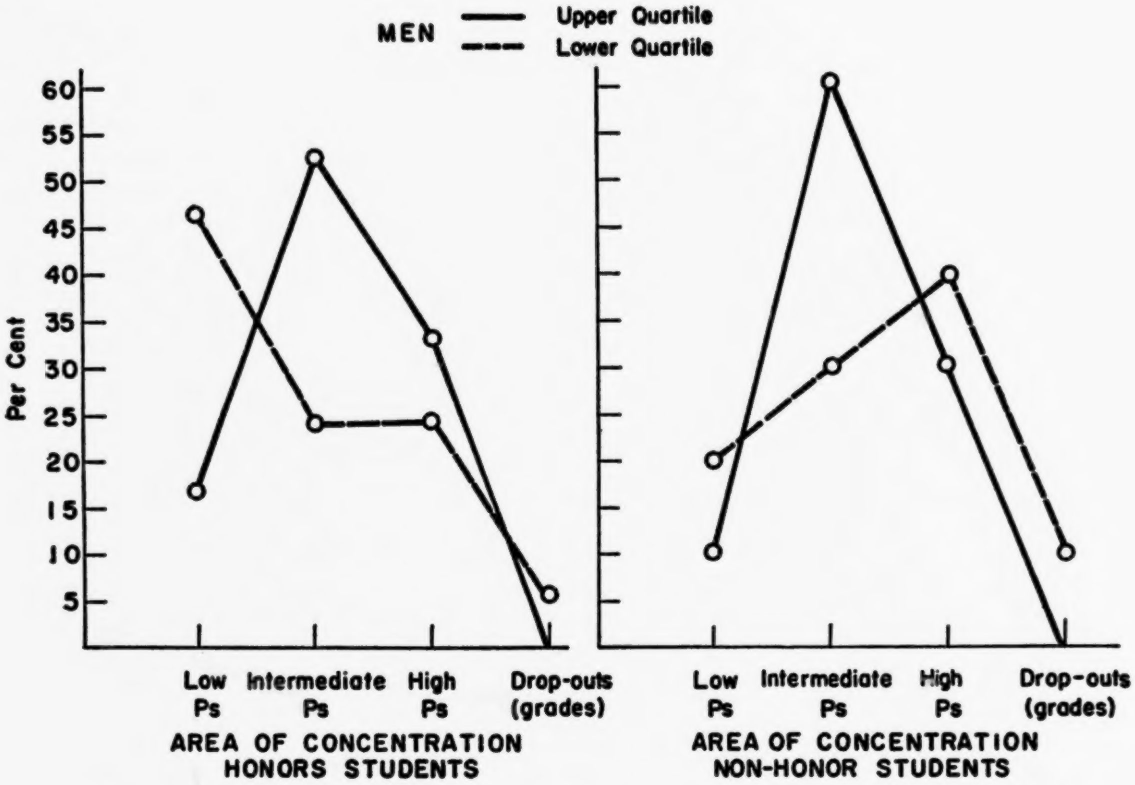


FIG. 2. The percentage of men in the upper quartile (achievement group) and in lower quartile (failure-avoidance group) of the distribution of differences between the transformed n Ach and Test Anxiety scores concentrating in Low, Intermediate, and High P_s areas. (Also shown is the percentage of each motivational group withdrawing from college because of poor grades. The left-hand portion of the figure describes the choices of men in the honors program while the right-hand portion describes the choice of men not in the honors program. The N of honors students = 35; N of nonhonors students = 20.)

or below the median score of the distribution of the differences between the transformed n Ach and Test Anxiety scores. The men with scores above the median will be described as the achievement group whereas those below the median will be described as the failure-avoidance group. The achievement men in the nonhonors group evidence the predicted selection of concentration areas of intermediate probability of success (Intermediate P_s). The same trend can be observed in the honors group although the effect is not as pronounced.

Since those falling in the middle range of the distribution of the differences between the transformed Achievement and Test Anxiety scores are likely to have mixed patterns of motives, a purer measure of achievement and failure-avoidance motives would be obtained by consideration of only those falling in the upper and lower quartiles of the distributions.

Figure 2 presents the concentration areas for these purer representatives of achievement and failure-avoidance motives. Patterns of curricular choices similar to those in Figure 1 are obtained, and the difference between the groups is accentuated, as should be the case.

For statistical analysis, the choices of the honors and nonhonors men in the achievement and failure-avoidance groups (Figure 1) were combined and the "dropout" category was omitted from consideration. The chi-square value obtained from these combined data is between the .05 and .10 level ($\chi^2 = 3.56$, $df = 2$). A similar combination of data obtained from the men in the upper and lower quartiles (Figure 2) of the transformed achievement distribution yielded a chi square of 4.98 ($df = 2$) which falls between the .05 and .01 levels.

Similar plots of the choices of concentration areas for women are presented in Figures 3 and 4. Figure 3 presents a comparison of the curricular choices of the achievement and failure-avoidance groups based on whether or not the person was above or below the median of the distribution of differences between the transformed Achievement or Test Anxiety scores.

Figure 4 compares the choices of women falling in the upper and lower quartiles of the same distribution.

The allover relationship between achievement and failure-avoidance motives found in the data obtained from the men does not appear in the data from the women. This result is not unexpected because the projective measures used to assess n Ach have not been generally successful with women. The n Ach measure for women has been thought to constitute a rather separate problem (see McClelland et al., 1953, pp. 172–181). On the other hand women in the honors program who were the most representative of achievement motivation (Figure 4) showed a tendency to choose concentrate areas of intermediate probabilities of success. Women of a similar motivational pattern in the nonhonors group, however, showed a preference for the concentrate areas with the greatest P_s.

There seems to be a rather striking difference between the curricular choices of women in the honors program and those not in the honors program. The high failure-avoidance women in the honors program tend to take programs leading to teaching certificates whereas this difference tends to wash out or actually be reversed in the nonhonors group. At least for women in the honors program the acquisition of teaching certificates seems closely related to high scores on the Test Anxiety questionnaire.

While the men's choices of concentration areas seem to support the general model proposed by Atkinson, there are certain theoretical predictions which are not supported. Atkinson's model would predict that men motivated primarily by failure-avoidance who select Low P_s concentration areas should be ones who have had experiences of failure in either High P_s or Low P_s areas. Success obtained at the highest P_s choices would make these choices seem to be easier than they had supposed and thereby make this alternative even more attractive. Students electing such areas of concentration would continue in them. Success in the lowest P_s areas would tend to make success in them more likely and reduce the attractiveness of the courses.

On the other hand failure-avoidance motivated

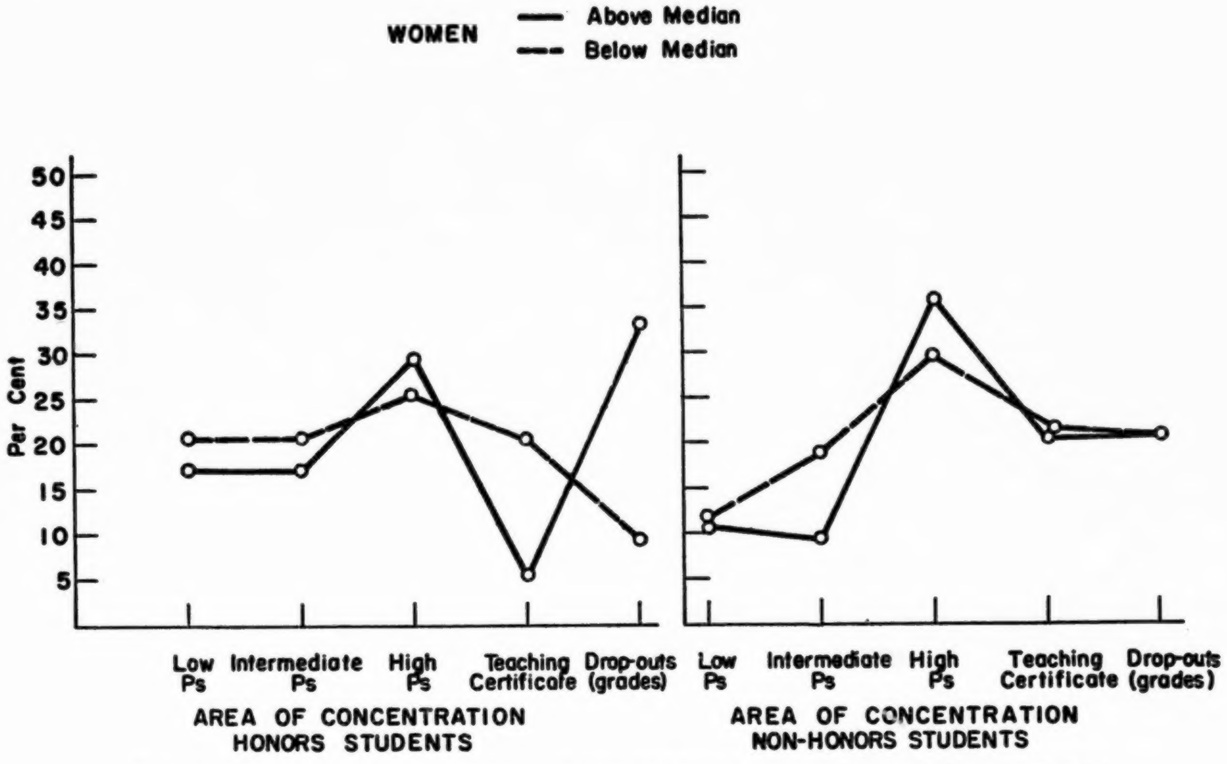


FIG. 3. The percentage of women above (achievement group) and below (failure-avoidance group) the median of the distribution of the differences between the transformed n Ach and Test Anxiety scores concentrating in Low, Intermediate, and High P_s areas. (Also shown are the percentages of each motivational group obtaining teaching certificates and withdrawing from college because of poor grades. The left-hand portion of the figure describes the choices of women in the honors program while the right-hand portion describes the choices of women not in the honors program. The N of honors students $= 42$; N of nonhonors students $= 67$.)

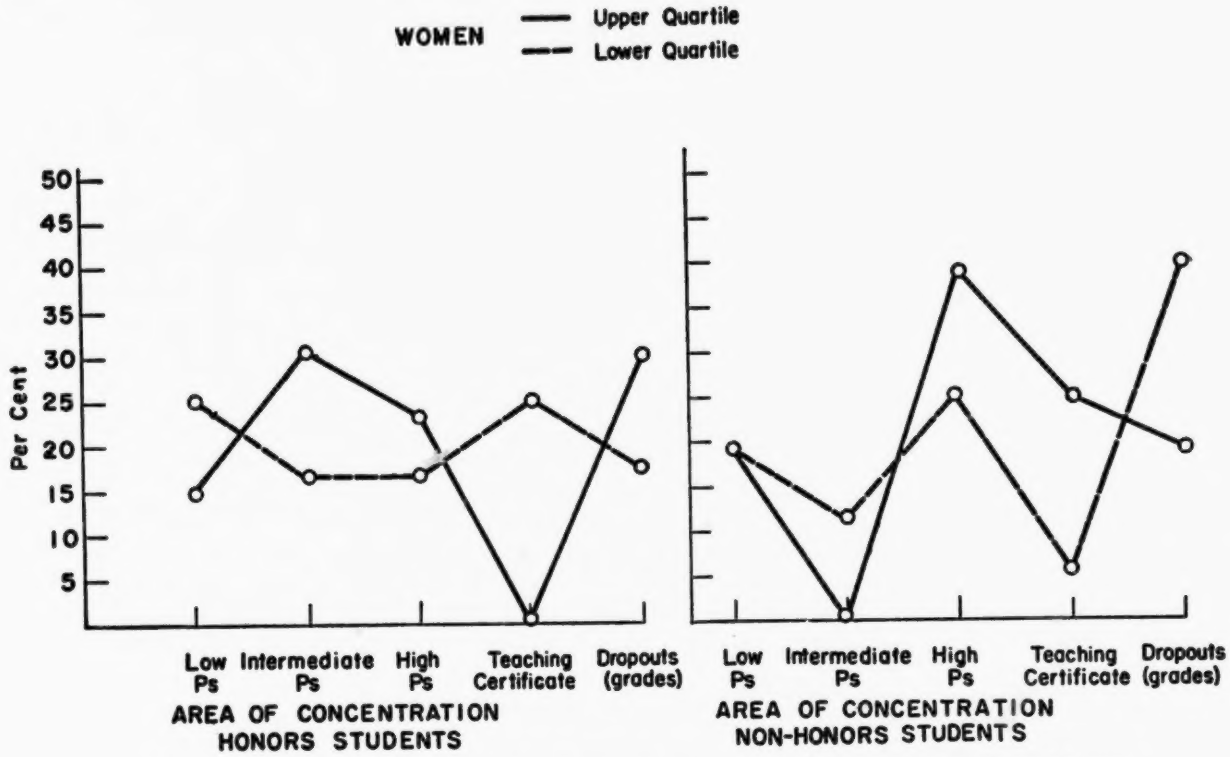


FIG. 4. The percentage of women in the upper quartile (achievement group) and lower quartile (failure-avoidance group) of the distribution of differences between the transformed n Ach and Test Anxiety scores concentrating in Low, Intermediate, and High P_s areas. (Also shown are the percentages of each motivational category obtaining teaching certificates and withdrawing from college because of poor grades. The left-hand portion of the figure describes the choices of women in the honors program while the right-hand portion describes the choices of women not in the honors program. The N of honors students = 22; N of nonhonors students = 32.)

men who select the concentration areas with the greatest probabilities of success should have histories of success at these easiest areas or successes in the concentrate programs with the least probabilities of success.

The figures which portray the selection of courses of men show that the failure-avoidance men in the honors program tend to elect more of the Low P_s areas than do the nonhonors men. According to the theoretical predictions the former should have a past history of failures in the extreme P_s areas whereas the latter should have had successes in them. No differences in total grade-point averages or ACE (total) scores were found between the failure-avoidance groups majoring in the High or Low P_s areas.

In general the results obtained from men, at least, would suggest that the model proposed by Atkinson can be brought to bear upon problems which ordinarily are thought to be explicable only in terms of more elaborate theoretical models. The few concepts used in the model can be easily reduced to empirical observation and therefore invite future use in studies of decisions in the academic setting.

REFERENCES

ATKINSON, J. W. (Ed.) *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958.

ATKINSON, J. W., BASTIAN, J. R., EARL, R. W., & LITWIN, G. H. The achievement motive, goal setting, and probability preferences. *J. abnorm. soc. Psychol.*, 1960, **60**, 27–36.

ATKINSON, J. W., & LITWIN, G. H. Achievement motive and test anxiety conceived as a motive to approach success and motive to avoid failure. *J. abnorm. soc. Psychol.*, 1960, **60**, 52–63.

FRENCH, ELIZABETH G. Development of a measure of complex motivation. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton: Van Nostrand, 1958. Pp. 242–248.

MCCLELLAND, D. C., ATKINSON, J. W., CLARK, R. A., & LOWELL, E. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.

MANDLER, G., & SARASON, S. B. A study of anxiety and learning. *J. abnorm. soc. Psychol.*, 1952, **16**, 115–118.

(Received November 15, 1962)

II-2: Course Selection as Affected by Achievement Motivation, Test Anxiety, and Perceived Course Difficulty

Dale J. Helland and Robert L. Isaacson

Atkinson has made a distinction between persons who are relatively more motivated to achieve success and persons relatively more motivated to avoid failure in achievement related situations. The achievement oriented person is presumed to have been reinforced in the past for engaging, and succeeding, in achievement related activities and thus finds engaging in these tasks reinforcing. People relatively more motivated to avoid failure are presumed to have had more negatively reinforcing experiences in achievement related tasks and therefore have a tendency to avoid activities involving competition where their achievements will be evaluated in comparison with those of others.

Atkinson has proposed a method of predicting the choices that persons in an achievement related task will make (Atkinson, 1964). This prediction is dependent upon knowledge about the individual's motives for success and the avoidance of failure. The need for achievement (success orientation) is usually determined by administering a projective instrument (McClelland, Atkinson, Clark, & Lowell, 1953) and fear of failure is usually inferred from the score obtained from the Mandler-Sarason Test Anxiety questionnaire (1952). Also necessary for prediction of behavior are estimates of an individual's subjective probability of success, from which incentive values also can be determined.[1] Atkinson's model predicts that individuals high in motives for success will choose tasks perceived as being of intermediate difficulty (intermediate probability of success, $p \doteq .5$). Individuals with predominately success oriented motivation, but of less intensity, should display this same tendency, but to a reduced extent.

In considering those individuals primarily motivated to avoid failure, quite different predictions are obtained from Atkinson's model. Such people should exhibit a tendency to choose those tasks which they perceive as very difficult ($P_s \doteq .1$) or very easy ($P_s \doteq .9$). In these tasks success is either very improbable or very probable. In the case where success is very unlikely, the failure, if it occurred, would figuratively speaking, not carry the usual stigma, considering how difficult the task is and the number of other persons also failing. Here the incentive value of failure (I_f) is very small while the probability of failure is large. Where success is very likely, the tendency to avoid failure would not be large since failure is so improbable. While the incentive value of failure is very large in this case, the probability of failure is very small. Here again, those individuals having a less intense failure-avoidant orientation will have the same tendencies as those with the more intense orientation, only not to the same extent.

---

[1] The tendency to achieve success is equal to $T_s = M_s \times P_s \times I_s$ where M_s is the motive to achieve (as determined by the projective test), P_s is the probability of success and I_s (incentive value of success) is equal to $1-P_s$. The tendency to avoid failure is obtained from the similar formula $T_f = \bar{M}_{af} \times P_f \times I_f$ where $I_f = P_f$.

The clearest case of achievement motivation should be those people who are high in need achievement, and, at the same time, low in Test Anxiety. These persons should manifest the greatest tendency to choose tasks which they perceive as intermediate in difficulty. Similarly, those persons low in need achievement and high in Test Anxiety should have the greatest tendency to choose tasks seen by them as either very difficult or very easy. Independence of Test Anxiety and need achievement, when both are assessed under neutral testing conditions, has been established in a number of studies reported by Atkinson (1964).

Isaacson, in a study of students at the University of Michigan, has extended the testing of Atkinson's theory to the curricular choices of students in a non-laboratory situation (Isaacson, 1964). After transforming the n Achievement and Test Anxiety scores of the students into standard scores, he obtained the resultant "absolute tendency" for success or to avoid failure by subtracting the z-score for Test Anxiety from the z-score for n Achievement. Those students with a positive resultant score were judged to be relatively more motivated by a need to achieve, while those with a negative resultant score were relatively more motivated to avoid failure. Isaacson found that, for men, there was a tendency for students with a positive z-difference resultant score to choose curricula which were intermediate in difficulty, while those students with a negative z-difference score had a greater tendency to choose curricula which were very easy (honor students) or very difficult (non-honor students).

It seemed possible to extend the general model offered by Atkinson in a sophisticated but realistic manner by assuming that the student's presence in a particular course is determined by variables described in the model. Thus, students motivated to achieve success should have seen their probability of success in the courses they have selected as of intermediate value, and if students motivated to avoid failure are in the same courses, they should have seen the courses as either very difficult or very easy. The strong model to be tested, asserts that if a student is high in n Achievement and low in Test Anxiety, his presence in a course is prima facie evidence that his subjective probability of success is intermediate for that course. Students high in the failure-avoidant motive who have selected a course are considered to have made that selection on the basis of either high or low subjective probabilities of success.

We assumed that there was a continuum of absolute difficulty on which all the courses in the university could be placed which would be appropriate for most students. We also assumed that each student, consciously or unconsciously, would assign himself an individual probability of success for any course on the continuum. Furthermore, being in a course to which a certain probability of success or failure had been assigned should, it seemed, affect the student's perception of the difficulty of other courses on the continuum to which the course he was in is compared. Courses more toward the "hard" end of the continuum would be assigned lower probabilities of success than the probability of success for the courses he is in and courses more toward the "easy" end of the continuum would receive probabilities of success higher than that for the course in which the student is.

Information was available from fairly large numbers of students in two introductory psychology courses at the University of Michigan who were participating in another experiment (Brown and Raynor, 1966). One of the courses, Psychology as a Natural Science, is generally acknowledged by students and staff as more difficult than the other introductory course, Psychology as a Social Science. It was therefore hypothesized that, while the achievement motivated students in either class must have seen their probability of success as an intermediate value ($P_s=.5$) when the course was elected, the students in Psychology as a Natural Science who were motivated to avoid failure, should have perceived their probability of success as very low. Similarly, achievement motivated students in Psychology as a Social Science should have perceived their probability of success as of intermediate value, while failure-avoidant students in Psychology as a Social Science should have perceived the course as very easy. As each of these four student groups, the achievement oriented and failure-avoidant oriented students in Psychology as a Natural Science and Psychology as a Social Science, considers the difficulty of other courses, they should have different perceptions of the courses' difficulty depending upon the course they are in and their corresponding subjective probability of success demanded by the model. As an illustration, consider Figure 1, where Psychology as a Natural Science and Psychology as a Social Science are placed on an assumed continuum of actual course difilulty and where the hypothetical probabilities of success for each group of students in other courses can be determined. As an example, consider the achievement motivated students in Psychology as a Natural Science. As mentioned earlier, the model demands that the students have perceived their probability of success in the course as intermediate in value ($P_s=.5$). If they were to assess their probability of success in courses at the "hard" end of the continuum, which aren't very much more difficult than their own course which is considered to be relatively hard, they would have to give themselves a probability of success somewhat lower than their probability of success in Psychology as a Natural Science. In the example, they give themselves a subjective probability of success in the harder courses of .30 which is slightly lower than their subjective probability of success in Psychology as a Natural Science. In determining their probability of success in the "easy" courses, which are very much easier than Psychology as a Natural Science on the continuum of absolute course difficulty, they would assign themselves a probability of success much higher than that for Psychology as a Natural Science (in the example P_s for the "easy" courses =.95). Following similar arguments for the students in the other three groups we could obtain their perceived subjective probabilities of success for "hard" and "easy" courses. From the example, it seems clear that each group's subjective probability of success in their Psychology course in conjunction with their position on the

Figure 1

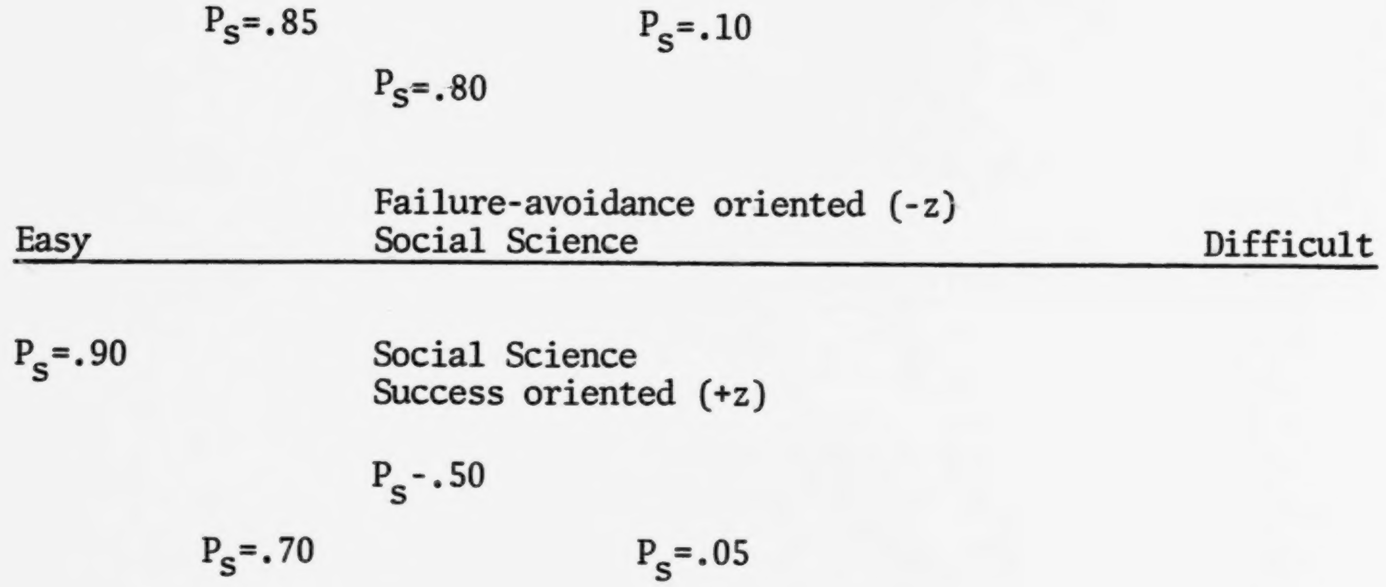

P_s=.85
P_s=.10
P_s=.80
Failure-avoidance oriented (-z)
Easy
Social Science
Difficult
P_s=.90
Social Science
Success oriented (+z)
P_s-.50
P_s=.70
P_s=.05

Figure 1a: Perception of the probability of success in the courses at the extreme ends of the scale of absolute difficulty by students in Psychology as a Social Science. (A hypothetical example)

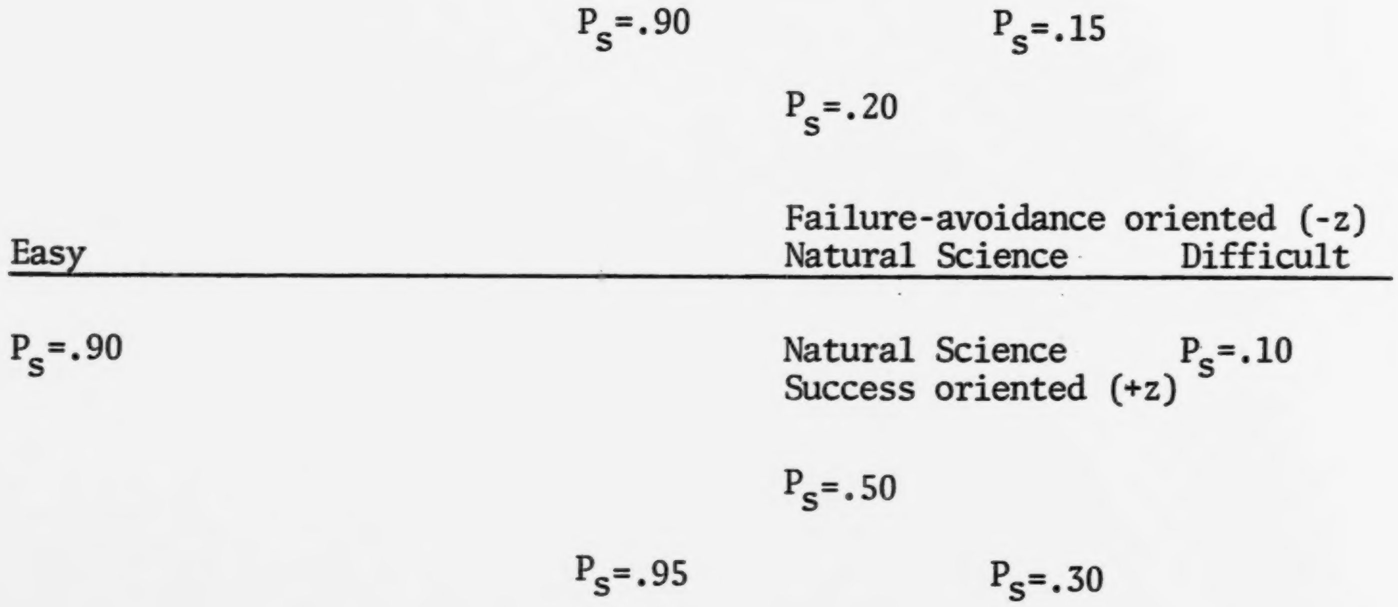

P_s=.90
P_s=.15
P_s=.20
Failure-avoidance oriented (-z)
Easy
Natural Science
Difficult
P_s=.90
Natural Science
Success oriented (+z)
P_s=.10
P_s=.50
P_s=.95
P_s=.30

Figure 1b: Perception of the probability of success in the courses at the extreme ends of the scale of absolute difficulty by the students in Psychology as a Social Science. (A hypothetical example)

continuum of absolute difficulty would be distinct (e.g., P_S=.50 plus "toward the 'hard' end of the continuum" for the achievement oriented students in Psychology as a Natural Science). Therefore, each group would have unique subjective probabilities of success for the "hard" and for the "easy" courses. Following this method, an ordering of the "hard" and "easy" courses should be possible by the students. It was hypothesized that the success oriented students in Psychology as a Social Science would see the difficult courses as most difficult, the failure-avoidance oriented students in Psychology as a Social Science should come next followed by the failure-avoidance oriented students in Psychology as a Natural Science. Finally, the success oriented students in Psychology as a Natural Science should see their probability of success in the "hard" courses as higher than any of the other groups. When considering the "easy" courses, it was predicted that the same ordering would be retained with the success oriented students in Psychology as a Social Science perceiving the "easy" courses more difficult than any other group and the success oriented students in Psychology as a Natural Science seeing them as easier than any other group.

Background to Present Study

In the course of analysis of the experiment by Brown and Raynor, who used students from the two introductory psychology courses, it was found that students in Psychology as a Social Science received significantly higher n Achievement scores than the students in Psychology as a Natural Science. We believed that it was possible that the difference could be due to the differences in the perceived difficulty of the two courses, and that this factor in combination with motive factors had acted as a criterion for self-selection of the courses.

Method

To test our hypotheses, the students participating in Brown and Raynor's experiment were asked to fill out a questionnaire, Figure 2, where they were asked to state whether they thought each of twenty-one different introductory courses offered at the University of Michigan was harder or easier than the psychology course they were taking. The courses listed were introductory courses in various areas of study at the University of Michigan. The twenty-one chosen were those courses frequently taken by freshmen and sophomores. The students were also asked to indicate whether each of the courses was harder or easier than they thought the other introductory psychology course was. Completed questionnaires were received from 58 students in Psychology as a Social Science and 87 from students in Psychology as a Natural Science. All of the respondents were male. The z-difference scores for the students, obtained from a six picture n Achievement test from Atkinson (1958) and the Mandler-Sarason Test Anxiety questionnaire, had been computed by Brown and Raynor (1966) and were used to separate the students into success oriented and failure-avoidance oriented groups. As determined by the z-difference technique, there were 33 success oriented students and 54 failure-avoidance oriented students in Psychology as a Natural Science and in Psychology as a Social Science there were 41 success oriented and 17 failure-avoidance oriented students.

Figure 2

Please indicate for each of the courses listed below whether or not you believe that it would be easier or harder than Psychology (title of course they were taking), the course in which you are presently enrolled. After doing so, please indicate in the right hand column whether these courses would be harder or easier than the other Psychology course.

	Harder or easier than Psych.(course no.)		Harder or easier than Psych.(course no.)	
	Harder	Easier	Harder	Easier
Anthropology 101	____	____	____	____
Astronomy 111	____	____	____	____
Botany 101	____	____	____	____
Chemistry 104	____	____	____	____
Economics 201	____	____	____	____
English 123	____	____	____	____
French 101	____	____	____	____
Geology 113	____	____	____	____
German 101	____	____	____	____
Great Books 192	____	____	____	____
History 101	____	____	____	____
History of Art 101	____	____	____	____
Mathematics 104	____	____	____	____
Philosophy 101	____	____	____	____
Physics 104	____	____	____	____
Political Science 100	____	____	____	____
Russian 101	____	____	____	____
Sociology 100	____	____	____	____
Spanish 101	____	____	____	____
Speech 100	____	____	____	____
Zoology 101	____	____	____	____

In order to analyze the students' perception of the other courses, the courses were divided into four levels of difficulty. These levels were obtained from the students' evaluations of the courses. By using the proportion of students who said a course was easier than the psychology course they were taking, it was possible to form a rank ordering of the courses for each group from the course which that group saw as most difficult (the smallest proportion saying the other course was easier than their psychology course) to the course they saw as most easy (the largest proportion saying that the course was easier than their psychology course). We used the rank orderings of the success oriented students in Psychology as a Natural Science and Psychology as a Social Science and the failure-avoidance oriented group in Psychology as a Natural Science to arrive at a rank ordering which would be common to all of them.[2] We divided the total rank orderings into four categories, "hard," "fairly hard," "fairly easy," and "easy." These groupings were formed so that courses in one category for one of our student groups would be in the same category for the other groups. Fifteen of the twenty-one courses were thus consistently ranked into the four levels of difficulty.

Results and Discussion

The data for the comparison of students in the two courses are presented in Table 1. The students in Psychology as a Social Science had higher n Achievement and lower Test Anxiety scores than the students in Psychology as a Natural Science.

---

[2] The rankings of the failure-avoidance oriented students in Psychology as a Social Science were not used in determining the levels because there were too few rankings -- a number of courses receiving equal proportions, and therefore equal rankings -- to allow adequate ordering. This was caused by the small number of students who fit into this category (n=17).

Table 1

Comparison of 145 Students in Two Introductory Psychology Courses

Measure	Psychology Course				Test of Significance of Difference*
	Natural Science		Social Science		
	Mean	S.D.	Mean	S.D.	
n Achievement	12.67	7.17	16.67	7.25	t=3.25
Text Anxiety	99.83	22.45	92.91	21.61	t=1.84
Number of courses judged to be easier than Psychology as a Natural Science	10.14	3.59	8.57	3.59	t=2.50
Number of courses judged easier than Psychology as a Social Science	8.69	3.76	7.74	3.68	t=1.54
	t=2.65		t=1.19		
Number of students who were Success Oriented	33		41		X^2=13.66
Number of Students who were Failure-Avoidant	54		17		
N	87		58		

*For 145 degrees of freedom - t is well approximated by normal deviates.
Thus 1-tail probability levels are 1.65 for 5%, 2.32 for 1%
For 1 degree of freedom a X^2 of 11 is significant beyond the .001 level.

The resultant should be that there would be more Success Oriented students in the Social Science Course, more Failure-Avoidant sutdents in the Natural Science course. A Chi-square test for differences in the distributions of Success Oriented students (those with n Ach z-scores highers than their Test Anxiety z-scores) and Failure-Avoidant students (those whose Test Anxiety z-scores were the higher) in the two courses was highly significant, with the direction of difference as predicted.

In considering the rating of difficulty (determined by the number of courses rated easier than the course considered) of the two introductory psychology courses, students in Psychology as a Natural Science judged their course to be more difficult than Psychology as a Social Science. Students in Psychology as a Social Science also reported Psychology as a Natural Science as more difficult than their own course but the difference did not reach statistical significance at the .05 level. Further, Psychology as a Natural Science was seen as more difficult by the students actually in it than Psychology as a Social Science was perceived by those who were in it. The two groups of students did not differ significantly in their perceptions of the difficulty of Psychology as a Social Science, but did in their view of Psychology as a Natural Science.

The differences in the perceived difficulty of the courses, both actual and as affected by the difference between Success Oriented and Failure-Avoidant students, should cause a differential ordering of the courses with respect to the perceived difficulty of other courses. The results obtained from the questionnaire are presented in Figure 3. As is evident, the prediction was fairly well substantiated. The only group not consistent with the prediction was the Failure-Avoidant group in Psychology as a Social Science. The small number of students in this group could have caused this problem by making trends more difficult to observe.

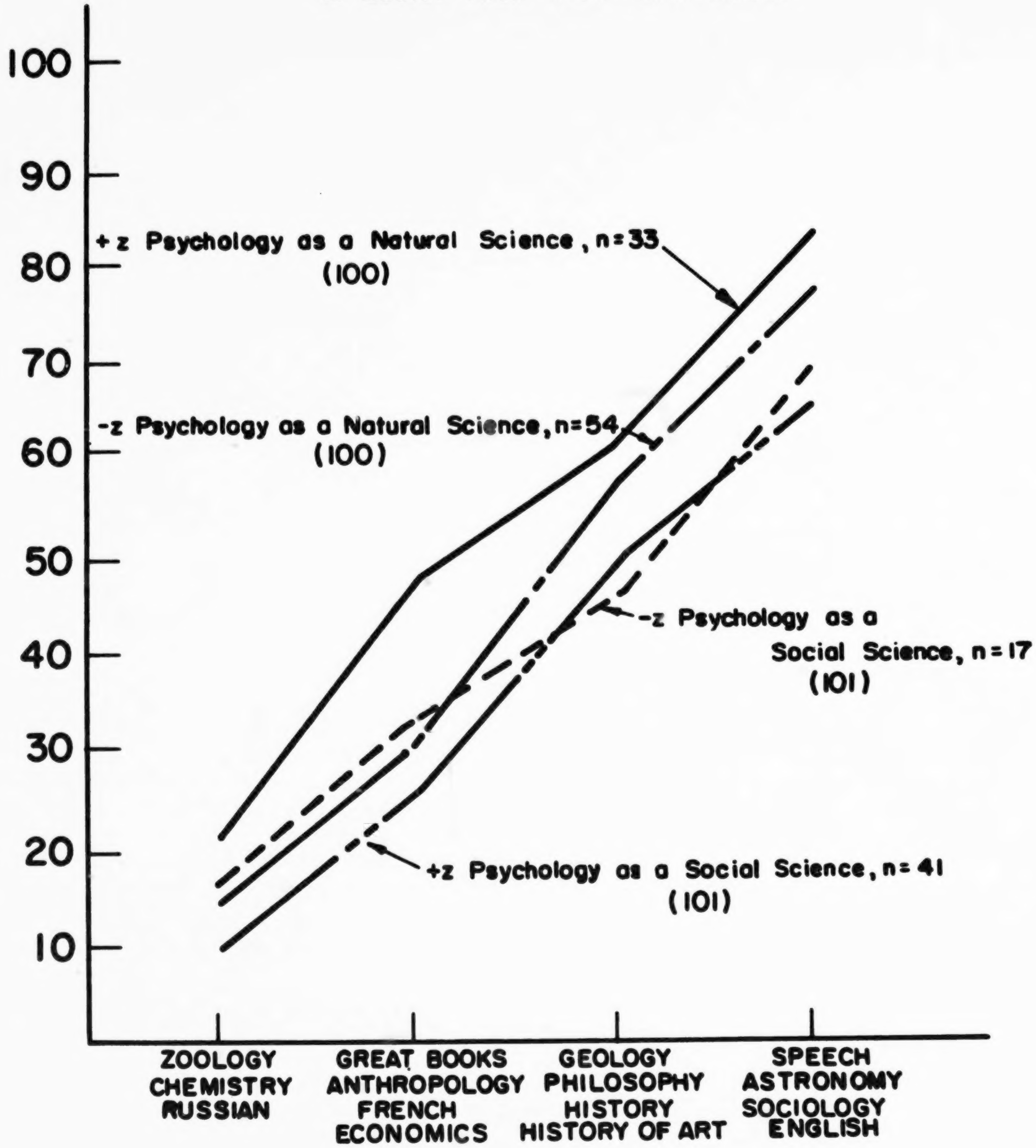
To test the significance of the differences between the four groups above each point on the horizontal axes of Figure 3, Chi-square tests were carried out on the proportions of members in each group saying that the course in a particular category was harder or easier than their own course. The results are shown in Table 2.

Table 2

Tests of Significance for Differences Between Proportions of Success Oriented and Failure-Avoidant Students in the Two Introductory Psychology Courses Who Reported Courses in Each of Four Groups to be Easier than Their Own Course

Course Grouping	X^2(3 d.f.)	P
Most Difficult (Zoology, Chemistry, Russian)	4.93	.25
Second Most Difficult (Great Books, Anthropology, French, Economics)	17.03	.001
Third Most Difficult (Geology, Philosophy, History, History of Art)	8.33	.05
Easiest (Speech, Astronomy, Sociology, English)	14.27	.005

Using the method for partitioning Chi-square given by Kastenbaum (1960) it was found that the major portion of the discrepancies was contributed by the difference between the Natural Science and the Social Science courses, but there was also some contribution made by the differences between the two groups within each course. It therefore seems that our hypothesis that a student's "absolute" difficulty will affect his perception of the difficulty of other courses is supported to some extent.



Mean Percent of Students in Each Introductory Psychology Course Saying A Group of Courses is Easier Than Their Own Course

FIG. 3

To find out if the results obtained using the z-difference scores were primarily determined by differences in n Achievement or in Test Anxiety, Chi-square comparisons of the two courses for each of these variables was made. When the distribution was made on the basis of n Achievement a Chi-square of 7.919 ($P < .005$) was obtained. When the distribution was made on the basis of Test Anxiety scores the value was 1.409 ($p < .25$). Thus, in our sample of male college students there seems to be a relationship between the achievement motive and the course selected by the student. This relationship is not as apparent when the failure-avoidance motive (as measured by Test Anxiety) is used as the variable on which the distribution is made. The differences shown in Table 1 also seem to indicate that n Achievement is more important in determining the z-difference groups than Test Anxiety scores.

Thus, the data seem to support the hypothesis that course selection is influenced by the individual's need for achievement, fear of failure, and his perception of the difficulty of the courses which he may select. The data seem to support the hypothesis that when faced with choosing one of two alternative courses, students high in need for achievement and low in test anxiety are more likely to choose the course perceived by them as of intermediate difficulty. Students high in test anxiety and low in need for achievement are more likely to choose a course perceived by them as hard or easy. Also, the data seem to support the hypothesis that being in a particular course and ascribing to himself a certain probability of success in the course, will affect the perceived difficulty of other courses for the student. Students in the two courses, differing in their achievement and failure-avoidance motivation, perceived their probability of success in other courses, basically, in accordance with the hypothesized directions. It also appears that achievement motivation is a more important determinant than test anxiety in the course selection as well as in other course perception for our sample.

References

Atkinson, J. W., (Ed.) Motivation in Fantasy, action and society--a method of assessment and study. Princeton: Van Nostrand, 1958.

Atkinson, J. W., An introduction to motivation. Princeton: Van Nostrand 1964.

Brown, M. and Raynor, J., "Relationships between n ach, test anxiety, and social approval in a college sample." In preparation, 1966.

Isaacson, R. L. "Relation between n achievement, test anxiety, and curricular choices." Journal of abnormal and social psychology, 1964, 68, 447-452.

Kastenbaum, M. A. "A note on the additive partitioning of Chi-square in contingency tables." Biometrics, 1960, 16, 416-422.

McClelland, D., Atkinson, J. W., Clark, R. A., and Lowell, E. 1. *The achievement motive*. New York: Appleton-Century-Crofts, Inc., 1953.

Mandler, G. and Sarason, S. B. "A study of anxiety and learning." *Journal of abnormal and social psychology*, 1952, *16*, 115-118.

II-3: Achievement-Related Motivation and Perceived Instrumentality of Grades to Future Career Success

Robert L. Isaacson and Joel O. Raynor

Atkinson and Litwin (1960) investigated the relationship between achievement-related motives and grades on a college course final examination. They found that students who were success-motivated (relatively higher in n Achievement than Test Anxiety) attained higher grades on the examination than students who were failure-motivated (relatively higher in Test Anxiety than n Achievement).

The college environment would seem to provide an archetype of an achievement-oriented situation. Students compete for grades with considerable intensity. Cues suggesting opportunities for competition with standards of excellence arise from classroom organization, the instructors, the other students, and competition for grades is part of the students' expectations about college.

However, in a representative college or university, there are many avenues of competition with standards of excellence. Viewed in this context of multiple competitive situations, it may be unreasonable to assume that achievement-related motives would be expressed in intense competition for grades in all academic courses. For example, it may be that different courses have different importance to students in terms of their longterm, or career, goals. In fact, one would anticipate that students should differ in their perceptions of the importance of grades to career programs. Relationships between specific course grades, or grades in general, to future career goals may play a role in the prediction of academic performance.

To explore these possibilities an instrument was devised to gain information about the students' perceptions of the relationship between longterm career goals and the course in which they were currently enrolled, as well as between career goals and academic grades in general. It was anticipated that the use of such an instrument might allow more precise prediction of the performance of students differing in achievement-related motivation.

The Haber-Alpert (1960) Debilitating Anxiety Scale (DA) of the Achievement Anxiety Test has been used as an index of the strength of students' achievement-related motivation. Atkinson (1964) has noted a relationship among results of studies employing measure of anxiety as an independent variable with those using the n Achievement measure in the same way. In many of these studies subjects high in anxiety performed in ways similar to subjects low in n Achievement, and subjects low in anxiety performed in ways similar to subjects High in n Achievement. Furthermore, Atkinson (1964) has presented the logic for inferring strength of achievement-related motivation for a group of subjects from a measure of either the motive to achieve success (Ms) or a measure of the motive to avoid failure (Mf). He argues that if a measure of Ms is uncorrelated with a measure of Mf, a group of persons in the upper extreme of anxiety scores will have the same strength of Ms as a group of persons in the lower extreme of anxiety scores. According to Atkinson, "This means that the disposition to be anxious is virtually absent in the Low anxiety group, which is otherwise as highly motivated to achieve (success) as the High anxiety group. Subjects classified Low in anxiety, in most of the anxiety studies, are persons in whom the resultant tendency (motivation) to approach success should be relatively strong. Subjects classified High in anxiety are persons in whom resultant tendency to approach success is either very weak, or, what is more likely since only those in the highest 20 percent of anxiety scores are normally employed,the resultant tendency is avoidant" (1964, p. 250).

In order to more safely infer resultant achievement-related motivation and to make motivational differences among groups as clear as possible, in this study only, the highest and lowest 15 percent (approximately) of anxiety scores were used as a basis of classifying students as Success-motivated or Failure-motivated. We assume that students in the highest 15 percent of Debilitating Anxiety scores will be predominately motivated to avoid failure, while students in the lowest 14 percent of Debilitating Anxiety scores will be predominately motivated to achieve success.

The findings of Atkinson and Litwin (1960) led to the expectation that Success-motivated students would attain higher course grades than Failure-motivated students. No hypotheses were originally formulated concerning the effects on course grades of perceived relatedness of grades to future career success, since the formal theory of achievement motivation (Atkinson and Feather, 1966) was inadequate to generate such predictions.

Method

Subjects were male students enrolled in the introductory psychology and introductory economics courses at the University of Michigan in the Fall semester, 1964.[1] A questionnaire which included the Debilitating Anxiety Test was administered by each instructor to his own section following standardized testing routines. The questionnaires were given at different times from the sixth week to the eleventh week of a sixteen week semester.

For each of the 10 items of the Debilitating Anxiety scale, five statements describing varying degrees of agreement were provided. The students were asked to mark the one alternative which was most appropriate. The directions of the questionnaire contained the following instructions: "To aid you in answering, the terms have been defined on a percentage basis as follows: A- Rarely - means from 0 to 15% of the time; B - Sometimes - means from 16 to 35% of the time; C- Frequently - means from 36 to 65% of the time; D - Generally - means from 66 to 85% of the time; E- Almost always - means from 86 to 100% of the time." Items were scored so that a 5 indicated highest amount of anxiety and a 1 indicated lowest amount of anxiety. A total Debilitating Anxiety score was obtained by summing scores for the individual items. Scores could possibly range from

---

[1] A complete description of the procedures and populations studied can be found in Stakenas (1965). The inclusion of the Perceived Instrumentality questionnaire (to be mentioned) in the materials used by Stakenas was on the basis of the earlier development of the questionnaire by Isaacson in a pilot experiment.

10 to 50. For students in the psychology course the distribution of Debilitating Anxiety scores ranged from 12 to 41, with a mean of 27.19 (N=307), and an S.D. of 5.41. For students in the economics course the range was from 12 to 44 with a mean of 26.87 (N=276) and an S.D. of 6.09.

For the purposes of this study, psychology and economics course students with Debilitating Anxiety scores from 12 to 22 were considered Success-motivated, while students in the psychology and economics courses with Debilitating Anxiety scores of 33 and above were considered Failure-motivated.

Three questions concerning the relationship between academic grades and future career goals (termed "Perceived Instrumentality" or PI) were administered as part of a "Student Rating Form" severaldays before the course final examination and before students knew their final course grades. One item asked "To what extent do you believe that good grades in all your college courses will help you to do well in your chosen career?", a second item asked "To what extent do you think your college grades will be used as a basis for your selection into a career?", and a third asked "To what extent do you believe getting a good grade in this course will help you to do well in your chosen career?" For each question four appropriate statements describing various extents of belief were provided. A score of 1 was given when a student checked the alternative indicating very great extent of belief, a score of 2 was given for the alternative indicating some extent of belief, a score of 3 was given for the alternative indicating little extent of belief, and a score of 4 was given for the alternative indicating practically no extent of belief. The lower the Perceived Instrumentality score the greater the perceived relatedness of grades to future career success.

To examine relationships between other variables and measured Perceived Instrumentality, three indices were used: A General Perceived Instrumentality score (summation of first two items given above) reflecting each student's perceived relatedness of all his college grades to his later career success (selection into that career and doing well in it), a Specific Perceived Instrumentality score (the third item above) reflecting the student's perceived relatedness of his specific course grade (either psychology or economics) to career success (doing well in it), and a Total Perceived Instrumentality score reflecting the total effect of perceived relatedness of grades to future careers.

The group of students was divided into approximate thirds on the basis of each Perceived Instrumentality score (General, Specific, and Total). The same cutting scores were used for both psychology and economics students and this sometimes resulted in subgroups of unequal size. This method of classification was adhered to however in order to permit comparison of results for the two courses as well as the combining of results from them.

The distribution of General Perceived Instrumentality scores ranged from 2 to 8; students with scores of 2 or 3 were classified High, those with a score of 4 were classified Intermediate, and those with scores from 5 through 8 were classified Low. Specific Perceived Instrumentality scores ranged from 1 to 4: students with a score of 1 were classified High, those with a score of 2 were considered Intermediate, and those with scores of 3 and 4 were classified Low. The distribution of Total Perceived Instrumentality scores ranged from 3 through 12: students with scores of 3, 4, and 5 were considered High, those with scores of 6 and 7 were considered Intermediate, and those with scores of 8 through 12 were considered Low.

Complete data were available for 307 psychology student and 276 economics students: 52 students in psychology and 38 students in economics were classified as Success-motivated on the basis of their extremely low Debilitating Anxiety scores, while 52 students in psychology and 63 students in economics were classified as Failure-motivated on the same basis. Grades were transformed to the numerical scale: 4=A, 3=B, 2=C, 1=D, and 0=E.

Results

Comparisons of the psychology and economics courses which served as populations from which Success-motivated and Failure-motivated subjects were selected are shown in Table 1. In terms of average values and dispersions, the data from the two courses were similar with respect to Debilitating Anxiety scores, course grades and General Perceived Instrumentality. This last finding indicated that students in the psychology and economics courses did not differ in their perceptions of the importance of grades in general to future career success. However, Specific Perceived Instrumentality scores were significantly different for the two courses, in that economics students perceived their course grades as more important for future career success than did psychology students.

Table 1

Means and S.D.s of Variables in Introductory Psychology and Introductory Economics

	Psychology (N=307)		Economics (N=276)		
Variable	Mean	S.D.	Mean	S.D.	t
Debilitating Anxiety	27.19	5.41	26.87	6.09	0.67
Course Grade	2.78	0.83	2.66	0.86	1.71
General Perceived Instrumentality(GPI)	4.23	1.56	4.26	1.52	0.23
Specific Perceived Instrumentality(SPI)	2.40	0.91	2.22	0.89	2.29*

*p .025, two-tailed test.

Correlations among the variables in the two courses, appearing in Table 2, differed only in that Specific Perceived Instrumentality scores were slightly related to course grades in economics but not in psychology. The difference between these correlations was significant ($Z=2.02$, $p < .05$, two-tailed test). Relationships between other variables were in general similar in the two courses: differences between respective correlations were not significant.

Table 2

Intercorrelations of Variables

Above diagonal represents the psychology course (N=307). Below the diagonal represents the economics course (N=276).

	DA	GPI	SPI	Grades
Anxiety		.01	.06	-.25**
GPI	.14*		.51**	-.12
SPI	.17**	.36**		-.02
Grades	-.18**	-.08	.15*	

* p .05 two-tailed test.

** p .01 two-tailed test.

The results reported thus far show that the two populations from which Success-motivated and Failure-motivated subjects were selected were fairly similar with respect to the variable measured and with respect to the inter-relationships of these variables within each population. Therefore, data from the two courses were combined, although separate analyses of the data from each course were also examined. It will be recalled that Success-motivated subjects from the two courses were selected from the same range of anxiety scores (12 to 22), and Failure-motivated subjects from the two courses were also selected from the same range of anxiety scores (33 and above). In addition, categories of Perceived Instrumentality were identical for the two courses. Raw grade scores were used throughout since mean course grades were not significantly different between the two courses.

The results obtained when the combined sample and Total Perceived Instrumentality scores were considered are presented in Figure 1. First, there was little difference in mean grades between High (2.70, N=70), Intermediate (2.74,N=80), and Low (2.82, N=56) Total Perceived Instrumentality groups. Second, within each category of Total Perceived Instrumentality, Success-motivated subjects received higher grades than did Failure-motivated subjects. Third, the difference between grades received by Success-motivated and Failure-motivated subjects increased with an increase in Total Perceived Instrumentality. The differences between mean grades of the success- and failure-motivated groups was smallest for the Low Perceived Instrumentality group (0.25), intermediate for the Intermediate Perceived Instrumentality group (0.60), and largest for the High Perceived Instrumentality group (0.77). Finally, there were clear trends showing that Success-motivated subjects received higher grades with an increase in Total Perceived Instrumentality while Failure-motivated subjects received lower grades with an increase in Total Perceived Instrumentality.

Analysis of variance was applied to these grades as a function of students' Success and Failure motivation and Total Perceived Instrumentality categories. There was a significant effect as described due to motivation (F=16.57, df=1 and 200, $p<.001$) but little, if any, effect due to Total Perceived Instrumentality categories (F=0.10, df=1 and 200, nss.). There was also a significant interaction effect on course grades as described between students' achievement motivation and Total Perceived Instrumentality (F=3.23, df=2 and 200, $p<.05$).

Table 3

Analysis of Variance[a] of Mean Course Grades of Success and Failure Motivated Students for Three Categories of Total Perceived Instrumentality. (TPI)

Source	SS	df	MS	F
Motivation	13.59	1	13.59	16.57**
Total Perceived Instrumentality (TPI)	0.16	2	0.08	0.10
Interaction	5.29	2	2.65	3.23*
Error	164.32	200	0.82	

* p .05
** p .001

[a] Unweighted means solution for unequal N analysis of variance (Winer, 1962, p. 241).

The results for the psychology course and economics course separately were similar to those reported for the combined sample. The effects of General and Specific Perceived Instrumentality for the combined sample and the two courses separately were also similar to those reported for total Perceived Instrumentality. (See Tables 4 & 5).

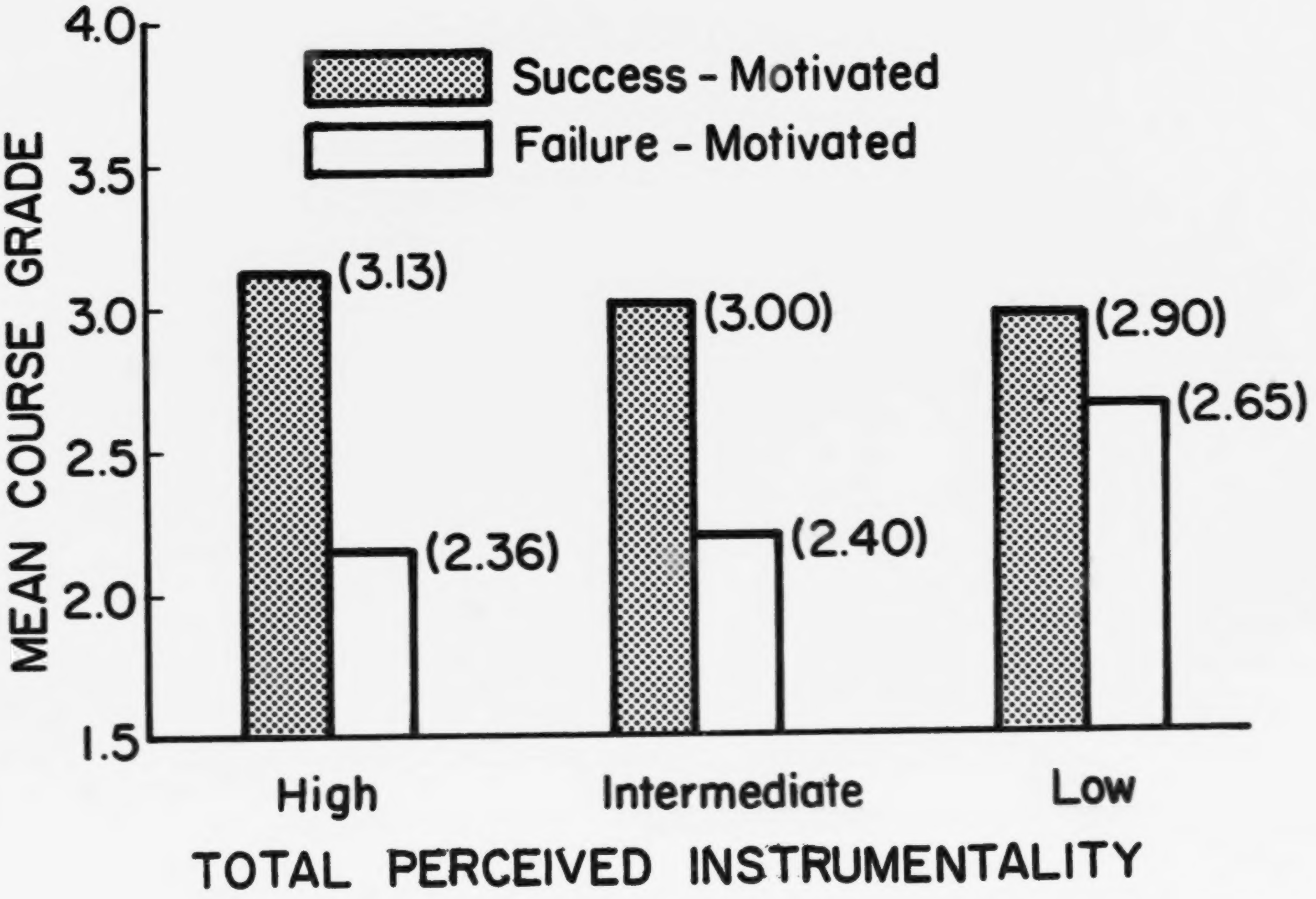


Figure 1. Mean course grades of Success- and Failure-motivated students within three categories of Total Perceived Instrumentality.

Table 4

Mean Course Grades of Success- and Failure-motivated Students Within Three Categories of Perceived Instrumentality

		High	Intermed	Low
Combined				
Success-motivated	GPI	3.19 (31)[1]	2.84 (32)	2.98 (52)
	SPI	2.95 (19)	3.09 (55)	2.90 (41)
Failure-motivated	GPI	2.34 (38)	2.33 (27)	2.65 (26)
	SPI	2.15 (27)	2.55 (42)	2.55 (22)
Psychology				
Success-motivated	GPI	3.39 (18)	2.93 (15)	3.11 (19)
	SPI	3.00 (11)	3.34 (23)	3.00 (18)
Failure-motivated	GPI	2.10 (21)	2.37 (19)	2.54 (13)
	SPI	2.15 (13)	2.38 (24)	2.31 (16)
Economics				
Success-motivated	GPI	2.92 (13)	2.76 (17)	2.91 (33)
	SPI	2.88 (8)	2.91 (32)	2.83 (23)
Failure-motivated	GPI	2.65 (17)	2.25 (8)	2.77 (13)
	SPI	2.14 (14)	2.78 (18)	3.17 (6)

[1] Number of subjects in each cell.

Table 5

Mean Course Grade "Difference Scores" Between Success-motivated and Failure-motivated Students: Success-minus Failure-motivated

	Perceived Instrumentality		
	High	Intermed	Low
Combined			
General PI	0.85	0.51	0.33
Specific PI	0.80	0.54	0.35
Psychology			
General PI	1.29	0.56	0.57
Specific PI	0.85	0.96	0.69
Economics			
General PI	0.27	0.51	0.14
Specific PI	0.74	0.13	-0.34

Our results allow evaluation of the assumptions made earlier in this paper concerning the inference of achievement-related motivation from a measure of anxiety alone. The differential effects of perceived relatedness of grades to future career success, that is, increments in the performance of Success-motivated subjects and decrements in performance of Failure-motivated subjects, lend support to the contention that persons in the lowest 15 percent of Debilitating Anxiety scores were motivated to achieve success, rather than weakly motivated to avoid failure. Under this assumption, the performance of these subjects should have decreased to a lesser extent than the extreme high anxiety subjects, when grades were perceived as related to future career success. The contrary result was obtained in the [illegible] performances of these subjects increased when grades were perceived as important to future career success.

If the inference of success motivation from anxiety scores is satisfactory the current theory of achievement motivation (Atkinson and Feather, 1966) cannot account for our results reported here. According to this theory, the achievement-related motivation (termed "tendency") toward a given task is the product of (1) a latent motive to achieve success (Ms) as measured by the n Achievement score in the manner described by McClelland et al. (1953), (2) the subjective probability of attainment of an (immediate) goal (Ps), and (3) the incentive value of the (immediate) goal (Is) is defined as (1 - Ps). In a similar fashion the tendency to avoid failure is expressed as the product of the latent motive to avoid failure (Mf) as measured by objective anxiety scores, the subjective probability of failure (Pf), and the incentive value (negative) of failure (If), where (If) is defined as (-Ps). The theory predicts, in part, that persons in whom Ms > Mf (Success-motivated) will work harder and attain higher levels of performance than persons in whom Mf > Ms (Failure-motivated), but the difference between these two groups will be greatest for intermediate values of Ps (Ps about .50).

One implication of the theory is that strength of the resultant achievement-related tendency (obtained by the algebraic summation of the tendencies to achieve success and to avoid failure, the latter being negative in sign) for two groups of persons having the same resultant motive strength is solely a function of the subjective probabilities of success and failure on the immediate achievement task. That is, for the same skill task presented in an achievement-oriented situation, the theory would predict no difference in performance between two equivalent groups of persons categorized as Success-motivated. Similarly, the theory would predict no difference in performance between two equivalent groups of persons categorized as Failure-motivated.

However, the results of the present study show clearly that academic performance in introductory college courses differed between groups of Success-motivated subjects and also between groups of Failure-motivated subjects who had different perceptions of how important course grades were for future career goals. Atkinson (1966) also has noted that

Since ability (SAT) scores are inversely related to DA scores, and positively related to course grades, it was necessary to determine whether the effects attributed to achievement-related motivation could be attributed to difference in ability. Therefore, mean SAT Total scores were calculated for each motivational group and analysis of variance applied to these scores considering students' Success and Failure motivation and Total Perceived Instrumentality categories. As would be expected, Success-motivated students, as inferred from low DA scores, had significantly higher (Total) SAT scores than Failure-motivated students (F=76.61, df=1 and 200, $p < .001$). However, the interaction effect between ability scores and motivation and perceived instrumentality (F=1.96, df=2 and 200, n.s.) was not significant. Moreover, the pattern of (Total) SAT scores in the perceived instrumentality groups indicated that differences in course grades between Total Perceived Instrumentality categories for Success- and Failure-motivated groups could not be attributed to differences in ability. Mean (Total) SAT scores for Success-motivated subjects within each Total Perceived Instrumentality category were: Low, 129.00, Intermediate, 125.02, and High, 120.39. Mean (Total) SAT scores of Failure-motivated subjects in each Total Perceived Instrumentality category were: Low 105.47, Intermediate, 110.74 and High, 104.36. Comparison of these values with mean course grades shows no consistent relationship between grades and ability within motivational classifications that would lead to the conclusion that the results reported here were due to differences in ability.

Discussion

The results of the present study indicate that the effects of student's achievement-related motivation on college grades were greater when grades were perceived as important to future career goals (selection into a career and doing well in it) than when grades were not so perceived. In general Success-motivated subjects received higher grades than Failure-motivated subjects, but the differences were consistentlygreater for categories of High Perceived Instrumentality than for categories of Low Perceived Instrumentality on three measures of instrumentality. In addition, the grades of Success-motivated subjects increased in a regular fashion as Total Perceived Instrumentality increased, while the grades of Failure-motivated subjects decreased in a regular fashion as Total Perceived Instrumentality increased.

The results of the present study are similar to those reported by Atkinson, Brown, and Raynor (cf. Atkinson, 1966). In this study the effects of college students' achievement-related motives were accentuated when students reported that the immediate achievement activity was related to future career success. Both studies suggest that the strength of achievement-related motivation, both approach and avoidance, is increased when an immediate achievement activity is perceived as important to the attainment of a future achievement goal.

effects of future orientation on present performance challenge the limited conception that "the strength of tendencies to achieve and to avoid failure in a particular activity should depend entirely upon expectations of success and failure in that particular activity" (P. 26).

The authors, as well as Raynor and Atkinson (in preparation), suggest that the strength of resultant achievement-related tendency is a function of two different kinds of tendencies: those determined by the strength of the motives to achieve success and avoid failure and the subjective probability of success associated with the immediate achievement activity, and those determined by the strength of Ms and Mf and the expectation of achieving future achievement-related goals.

Atkinson (1964) has suggested that "anxiety about failure" on an achievement task should be taken to represent a latent disposition not to engage in the activity if failure may occur. The finding of the present study that Failure-motivated subjects performed less well when they perceived grades as important to career success than when they did not is consistentwith the assumption that subjects classified very high in Debilitating Anxiety were actually inhibited in their performance. It is also consistent with the conception that the importance attributed to future achievement goals acts to increase the amount of inhibition that must be overcome to perform well on the immediate achievement task.

Future career goals might serve, for some individuals, as sources of motivation which are "extrinsic" to achievement concerns. Students might work hard to achieve future career goals to please their parents, or to increase their earning power, or to increase their ability to control other people. On these cases it might be expected that the performance of both Success-motivated and Failure-motivated subjects would increase when grades were perceived as important to future career success as compared to when they were not. If it were known that a group of students perceived their future career goal as involving incentives for performance which were extrinsic to achievement concerns, the differential effects of Success- and Failure-motivation reported in the present study should be less clearly manifested than if it were known that a group of students perceived their future career goal as achievement-oriented, i.e. one involving competition with standards of good performance.

In the present study students were asked to evaulate the importance of their course grade to future career success toward the end of the semester but before the final examination. It is possible that anticipation of success and/or failure based on experience in the course may have affected ratings of Perceived Instrumentality. To control for this possibility it might be desirable in future research to obtain ratings of Perceived Instrumentality at the beginning of a semester, prior to any experiences of success and failure in the course.

References

Atkinson, J.W. *An introduction to motivation*. Princeton: Van Nostrand, 1964.

Atkinson, J.W. An approach to the study of subjective aspects of achievement motivation. *Motivation and consciousness in man*. XVIII International Congress of Psychology, Moscow, 1966.

Atkinson, J.W. and Feather, N.T. *A theory of achievement motivation*. New York: Wiley and Sons, 1966.

Atkinson, J.W. and Litwin, G.H. Achievement motive and test anxiety conceived as motive to approach success and motives to avoid failure. *J. abnorm. soc. psychol*., 1960, *62*, 52-63.

Haber, R.N. and Alpert, R. Anxiety in academic achievement situations. *J. abnorm. soc. psychol.*, 1960, *61*, 207-215.

Raynor, J. O. and Atkinson, J.W. The significance of future goals for the theory of achievement motivation. University of Michigan. (In preparation.)

Stakenas, R.G. Evaluative stress, fear of failure and academic achievement. University of Michigan.Unpublished doctoral dissertation, 1965.

II - 4: The Functional Significance of Future Goals[1]

Joel E. Raynor[2]

The theory of achievement motivation is concerned with stating the functional significance of variables which influence an achievement-oriented act in a particular achievement-oriented situation. As pointed out by Feather (1959) and others, the theory is a particular example of the Expectancy - Value approach, which assumes that strength of tendency to act in a certain way depends upon the strength of expectancy that an act will be followed by a consequence, and the value of that consequence to the individual. In the present paper it is suggested that a more general statement of the theory of achievement motivation, based upon the principles of Expectancy - Value theory, provides a means of conceptualizing some recent empirical findings. These concern what has variously been referred to as the "salience," "relevance," or "importance" of achievement-oriented behavior. The findings suggest that an individual's characteristic achievement motivation for a particular achievement-oriented activity is increased when present performance is seen by the individual as instrumental to the attainment of other, future, achievement goals.

Table 1

Symbolic Representation of Current and Proposed Theories of Achievement Motivation

A. Current statement of the theory of achievement motivation. (Based on Atkinson and Feather, 1966)

1. $T_R = T_S + T_{-F}$

2. $T_S = M_S \text{ x } P_S \text{ x } I_S$

3. $T_{-F} = M_F \text{ x } P_F \text{ x } I_F$

4. $I_S = 1 - P_S$

5. $I_F = -P_S$, or $-I_F = P_S$

6. $P_S + P_F = 1$

---

1. Paper presented at the meetings of the American Psychological Association, September 3, 1967 as part of a symposium entitled: A Theory of achievement motivation: problems and new developments. Research reported here was supported in part by Office of Education, Research Contract O. E. No. SAE-8451, to W. J. McKeachie, J. E. Milholland, and R. L. Isaacson. This paper was prepared while the author was a USPHS Predoctoral Research Fellow.
2. The author wishes to acknowledge the considerable contribution of Dr. John W. Atkinson to the development of ideas presented here, and the critical assistance of Dr. Robert W. Moulton during preparation of this paper.

B. The sole situational determinant of the resultant tendency to achieve (T_R) is the subjective probability of success (P_S) at a particular achievement-oriented activity. (Based on Edwards, 1962, and Atkinson and Feather, 1966).

7. $T_R = (M_S \times P_S \times I_S) + (M_F \times P_F \times I_F)$

8. $T_R = (M_S \times P_S \times (1 - P_S)) + (M_F \times (1 - P_S) \times (-P_S))$

9. $T_R = (M_S - M_F) \cdot (P_S \times (1 - P_S))$

C. General statement of the theory of achievement motivation, based on principles of the Expectancy - Value approach.

10. $T_{R_T} = T_{S_T} + T_{-F_T}$

11. $T_{S_T} = \sum_{g=1}^{G} (T_{S_g})$

12. $T_{-F_T} = \sum_{g=1}^{G} (T_{-F_g})$

13. $T_{S_g} = M_S \times P_{S_g} \times I_{S_g}$

14. $T_{-F_g} = M_F \times P_{F_g} \times I_{F_g}$

15. $I_{S_g} = 1 - P_{S_g}$

16. $I_{F_g} = -P_{S_g}$, or $-I_{F_g} = P_{S_g}$

17. $P_{S_g} = P_{S_g, S_{g-1}} \times P_{S_{g-1}, S_{g-2}} \times P_{S_{g-2}, S_{g-3}} \times \ldots.$,

where $P_{S_g, S_{g-1}}$ represents the subjective probability of success at the g^{th} activity, given success at the $g - 1^{th}$ activity, and $P_{S_{g-1}, S_{g-2}}$ represents the subjective probability of success at the $g - 1^{th}$ activity, given success at the $g - 2^{th}$ activity, and so on.

18. $P_{S_g} + P_{F_g} = 1$

D. Extrinsic motivation to act in a particular achievement-oriented situation may also be increased when that activity has future implications.

19. $T_{Ext_T} = \overset{G}{\underset{g\,=\,1}{E}} (T_{Ext_g})$

20. $T_{Ext_g} = M_{Ext} \times P_{Ext_g} \times I_{Ext_g}$

E. Therefore, the final tendency to act in a particular achievement-oriented situation (T_{Fin}) may be represented as follows:

21. $T_{Fin} = T_{R_T} + T_{Ext_T}$

(In all of the above equations, the effects of inertial motivation on strength of tendency to act in a particular situation have not been represented).

As shown by Equations 1 to 3 in Table 1, the theory of achievement motivation, as stated by Atkinson and Feather (1966), assumes among other things that the direction, vigor, and persistence of a particular achievement-oriented act is determined by the resultant tendency to achieve. This resultant tendency is obtained by the algebraic summation of the tendency to achieve success and the tendency to avoid failure. These tendencies are assumed multiplicative functions of three variables: motive, expectancy or subjective probability, and incentive value. The motives to achieve success and to avoid failure are considered the personality determinants of the resultant tendency to achieve. The probabilities of success and failure, and the incentive values of success and failure, are considered the situational determinants of the resultant tendency to achieve. In the language of Expectancy - Value theory, subjective probability represents the Expectancy variable, and the product of motive and incentive represent the Value variable.

As shown by Equations 4 and 5, in the theory of achievement motivation two special assumptions are made concerning the relationship between subjective probability and incentive value: (1) the incentive value of success is assumed equal to one minus the subjective probability of success, and (2) the negative incentive value of failure is assumed equal to the subjective probability of success. It is also assumed that the subjective probabilities of success and failure vary between zero and one, and summate to one. As shown by Equations 7 to 9 of Table 1, when these assumptions are stated algebraically, and then simplified, it is seen that the subjective probability of success is the sole situational determinant of the resultant tendency to achieve.

The current statement of the theory of achievement is challenged by results of several recent unpublished studies conducted at the University of Michigan. The following consistent pattern of results has emerged: the characteristic effects of achievement-related motives are accentuated when students perceive their present achievement-oriented behavior as instrumental to the attainment of their own future career goals.

Table 2

Joint Effects on Grades in Introductory College Courses of Achievement-Related Motive Measures and Relation of the Grade to Future Career Success

		Relation of grade to future career success		
		Low	Intermediate	High
n Achievement	Test Anxiety			
High	Low	3.07[1]	-	3.25
Low	High	3.00	-	2.72
			(From Raynor, in preparation)	
Debilitating Anxiety				
Extreme Low		2.90	3.00	3.13
Extreme High		2.65	2.40	2.36
			(From Isaacson and Raynor, 1966)	

[1] A = 4, B = 3, C= 2, D = 1, Fail = 0

For example, as shown by Table 2 in a study conducted by Raynor (in preparation) the expected relationship between achievement-related motive measures and college grades was found: those male college students relatively higher in Need for Achievement than Test Anxiety (that is, those relatively stronger in the motive to achieve success than the motive to avoid failure) tended to receive higher grades in introductory psychology than those students relatively higher in Test Anxiety than Need for Achievement (that is, those relatively stronger in motive to avoid failure than motive to achieve). However, within the group relatively stronger in motive to achieve, students tended to receive *higher* grades when the particular course grade was seen as "helpful" and "important" to their own future career success than when it was not. On the other hand, within the group relatively stronger in the motive to avoid failure, students tended to receive *lower* grades when the grade was seen as "helpful" and "important" to their own future career success than when it was not. Isaacson and Raynor (1966) had previously found a similar trend using extreme Debilitating Anxiety scores to infer male college students' relative strength of achievement-related motives. In other words, in these two studies there was an accentuation of the predicted relationship between achievement-related motive measures and present academic performance for those male college students who saw their course performance as instrumental to two kinds of consequences, one immediate, success or failure in the particular course, and one in the future, success or failure in their future career.

This kind of result is anticipated in the work and arguments of others, such as Helen Peak (1955), Thomas and Zander (1959), Nuttin (1964), Vroom (1964), and Isaacson (1965). However, it is not predicted by the theory of achievement motivation, which assumes that the sole situational determinant of the resultant tendency to achieve is the subjective probability of success *in a particular achievement-oriented activity*. The theory of achievement motivation does not consider the possible influence of the expectations of success and failure at some future achievement-oriented activity, and the value of these consequences to the individual, on strength of resultant tendency to achieve. In this sense the theory of achievement motivation is a limited statement of the more general Expectancy-Value approach, which assumes that strength of tendency to act in a certain way depends upon strength of expectancy that an act will be followed by a consequence, and the value of that consequence to the individual, summated over all possible consequences.

It is now suggested that a more general statement of the theory of achievement motivation, based upon the principles of general Expectancy - Value theory, provides a means of conceptualizing the motivational significance of anticipated distant future goals. These principles were previously used in the theory of achievement motivation to take account of the fact that an individual sometimes engages in what appears to be achievement-oriented behavior in order to attain incentives which are extrinsic to achievement concerns, such as money, power, or the approval of others. It was assumed that sources of extrinsic tendency to act summate algebraically with tendency to achieve and tendency to avoid failure to determine total strength of tendency in a particular situation. This assumption was consistent with empirical findings, as noted by Atkinson and Feather (1966, pp.333-334). The logic of algebraic summation of tendencies, each representing a multiplicative function of motive, expectancy, and incentive, will now be applied to the case where the individual is simultaneously motivated to achieve success or avoid failure at a particular achievement-oriented activity and at one or more future achievement-oriented activities.

It will be assumed that when a particular achievement-oriented activity having an immediate goal is also seen by the individual as a step in a path, possibly a very long path, leading to some future achievement goal, there is a general intensification of the individual's characteristic achievement motivation conerning the activity. More specifically, under certain conditions to be specified, each activity in a particular path or sequence of achievement-oriented activities is assumed to determine a tendency to achieve success and a tendency to avoid failure. As shown by Equations 10 to 14 of Table 1, these tendencies, each represented as a multiplicative function of motive, expectancy, and incentive, are then summated over all achievement-oriented activities in that particular path or sequence. This yields the total resultant tendency to achieve which motivates achievement-oriented behavior on the present or immediate activity of that path.

The conditions required in order for this more general model to apply are the following: (1) a particular achievement-oriented activity is seen by the individual as part of a path or sequence of achievement-oriented activities leading to several achievement goals; (2) success at each activity of that path or sequence is necessary to attain success at the subsequent activity in that path; (3) failure at any activity in the sequence leads to failure at all subsequent activities in that particular path.

From Equations 15 and 16 it is seen that, as in previous statements of the theory of achievement motivation, the two special assumptions concerning the relationship between incentive value and subjective probability are maintained: incentive values of success equals one minus the subjective probability of success, and negative incentive value of failure equals subjective probability of success. In addition, as shown by Equation 17 of Table 1, it is assumed that for any activity in a particular path or sequence, subjective probability of success is represented by the product of the subjective probabilities at each prior activity in that path. This compound probability is used to determine the incentive values of success and failure for that activity, as seen by the individual prior to performance on the present or immediate activity. The compound subjective probability is also used to determine the contribution of the total resultant tendency to achieve of each activity seen by the individual in the particular path of which the present activity is a part.

The previous statement of the theory of achievement motivation is a special case of the more general theory presented here. That is, it can be shown that when a particular achievement-oriented activity is considered as an end in itself, not leading on to future achievement goals, the previous algebraic statement of the theory and the more general statement of the theory are equivalent.

The more general statement of the theory of achievement motivation presented here focuses attention on the future implications of present achievement-oriented behavior. It is to be noted that this model assumes that anticipated future consequences of present behavior differentially effect individuals, depending upon their relative strengths of achievement-related motives. For those individuals in whom motive to achieve success is relatively stronger than motive to avoid failure, anticipated future achievement consequences increase positive or approach achievement motivation for the present activity; for those in whom motive to avoid failure is relatively stronger than motive to achieve, anticipated future achievement consequences increase negative or avoidance achievement motivation for the present activity. These assumptions are consistent with the empirical findings cited earlier.

It also becomes important to know the cognitive structure of the individual, represented in the theory by expectations that a particular achievement-oriented act may lead to both immediate and more distant achievement consequences. For example, it can be derived from this more general statement of the theory that present achievement motivation is in part a function of the number of anticipated future achievement incentives; that is, the greater the number of achievement-oriented activities that are seen by the individual in a particular path or sequence,the greater the accentuation of his characteristic achievement motivation for the first activity of that path. It can also be derived from this model that present achievement motivation is in part a function of the magnitudes of the subjective probabilities of success at each activity in a particular sequence of achievement-oriented activities: in general, the higher the value of these subjective probabilities, the greater the accentuation of characteristic achievement motivation for the first activity.

There are other interesting implications of this model which might be discussed, but time does not permit this here. But it seems clear that future research on achievement motivation must specify and/or control the possible future implications of a particular achievement-oriented activity for the individual, in order to more adequately predict present achievement-oriented behavior. By doing so a particular achievement-oriented activity can then be viewed as taking place within the context of an interrelated series of acts rather than in isolation, which is often the consequence of artificially contrived achievement-oriented situations of the laboratory.

One final point. Extrinsic motivation to act may also be increased when a particular activity has future implications. As seen in Equations 19 to 21, conceptualization of the functional significance of anticipated future extrinsic goals follows the same principles of general Expectancy - Value theory outlined here. Extrinsic incentives may represent an important source of motivation in situations where present achievement-oriented behavior is seen by the individual as instrumental to the attainment of socially valued rewards which are contingent upon successful achievement-oriented behavior.

References

Atkinson, J.W. and Feather, N.T. (eds.) (1966). A theory of achievement motivation. New York: John Wiley & Sons.

Edwards, W. (1962) Utility, subjective probability, their interaction, and variance preferences. J. Conflict Resolution, 6, 42-51.

Isaacson, R.L. (1965). Personal communication to John W. Atkinson concerning the effects of achievement motivation on academic performance. The University of Michigan.

Isaacson, R.L. and Raynor. J.O. (1966). Achievement-related motivation and perceived instrumentality of grades to future career success. Unpublished paper, University of Michigan.

Feather, N.T. (1959). Subjective probability and decision under uncertainty. Psychol. Rev., 66, 150-164.

Nuttin, J. (1964). The future time perspective in human motivation and learning. Proceedings of the 17th International Congress of Psychology. Amsterdam: North-Holland Publishing Co.

Peak, Helen (1955), Attitude and motivation. In Jones, M.R. (ed.) Nebraska Symposium on Motivation, 1955. Lincoln, Nebraska: University of Nebraska Press, pp. 149-188.

Raynor, J.O. (in preparation). Achievement-related motives, perceived instrumentality, and grades in male and female college students. The University of Michigan.

Thomas, E. J. and Zander, A. (1959). The relationship of goal structure to motivation under extreme conditions. Journal of Individual Psychology. Vol. 15, 121-127.

Vroom, V. H. (1964). Work and Motivation. New York: John Wiley & Sons.

II-5: The Relationship Between Student Expectations and Performance in an Introductory Psychology Course

Robert Rosenwein

Students entering a college classroom for the first time bring with them a complex set of characteristics. They bring with them what we like to describe as "personality", the referents for which may include behavioral dispositions, affective states, motives, interaction goals, values, abilities, skills, and so on. They also bring with them expectation derived from past experience and bearing, we assume, some relationship to the characteristics noted above. Certain expectations may be conscious and explicit; others may be covert and less immediately apparent to student, instructor and experimenter. During the course experience, the student's expectations may be confirmed or not confirmed, may change or not, and/or the student may develop new expectations which he will carry on with him in later college experience. Much the same may be said for the instructor whose expectations of the nature of his students and his future interactions with them may determine at least part of his planning for content, structure, teaching method and other behavior in the classroom.

In this report, the focus is on the former. Specifically, I am concerned with student's expectations about the relevance of certain dimensions of teacher behavior and classroom structure to success in the course, the presence or absence of these dimensions as indexed by the student's perception of them at the end of the course, and the effect of the relationship between these on performance as indexed by final grade. The central question is: what is the effect on a student's performance when his expectations are "satisfied" (expected characteristic present in the classroom) or "frustrated" (expected characteristic not present in the classroom)?

Since the concept of expectation has seen wide and varied use in psychology, it will be helpful here to review briefly some definitions of the construct in order to clarify my conception of its position in the framework of variables which are seen as important in educational research. It will also be helpful to touch on some findings related to the effects of "unexpectedness" or "frustration of expectation."

There are three areas of psychology in which the concept of expectation has seemed particularly fruitful: motivation and learning, perception, and social psychology. Social psychology comes to the concept through the notion of role expectation, the prescriptions or behavioral demands on individuals occupying given positions within a social structure. Levinson (in Smelser and Smelser, 1961) provides and interesting discussion here. He considers three aspects of person-role interaction. The first is external role-demand, defined as the socially shared expectations by others (or "the other") of behavior characterizing a social position. The second is the individual's role conception, his expectations or understanding of the behavior required of him in a social position. The third aspect is the role performance, the behavior emitted by the person which represents his working out of the external and internal role "forces" in a compromise which is to a lesser or greater degree satisfactory to him and to others occupying other positions and with whom he interacts.

Logically, there are a number of possible disruptive factors for behavior here. There may be more than a single external role-demand, and these expectations may be in conflict. The individual's role conception may not correspond to the role-demands or his expectations may be ambiguous, that is, he may not be sure of what the role-demands are, or the demands may be for behaviors which are not in his repertoire or of which he is incapable. Such "role-overload", as it is called, has been found to have an adverse effect on behavior, and, as the clinical data attest, may be a precipitating condition for emotional disturbance (Goode, 1960; Biddle and Thomas, 1966). "Role-overload" as here defined may be important in predicting classroom performance since the classroom situation may lead the student to expect that certain behaviors which he may not possess are the ones which are most likely to lead to success. It is important to note, however, that the latest review of this area (Thomas and Biddle, 1966) indicates little adequate research on the effects of role overload proper on the emotional reactions of individuals, nor on the personality variables which may mediate the effects.

Bruner (1957) in considering perceptual functioning uses the term expectation to refer to a readiness on the part of the organism to interact with the environment in certain ways. The organism functions by building up "categories" through past commerce with the environment, and which it then uses in processing information from the environment with which it is confronted. The act of categorizing determines the "decision" the individual will make concerning the identity of objects and the optimal ways of behaving in relation to those objects. The likelihood of a particular categorizing occurring is jointly determined by the need states or goal orientations of the organism and his past experience in determining the "meaning" of certain environmental cues. It follows that the less opportunity the organism has to sample cues from the environment and the more ambiguous the situation, the more his perceptual "decision" will be based on a "best guess" determined by past experience and need state and the less likely it is to be veridical. An important point here is that expectations are functional for the organism in that they lead him to adopt behaviors which are most likely to lead to goal attainment.

Although there is still controversy about the effects of need-states on perceptual categorizing (see review by Henle, 1955; Secord and Backman, 1964), a study by Bruner and Postman (1949) has offered intriguing evidence for the notion that there are differential "styles" of responding to the frustration or disconfirmation of expectation. They exposed playing cards, with color reversed, tachistoscopically and found four different kinds of responses: assimilation to color (red ten of spades seen as red ten of hearts), assimilation to shape (red ten of spades seen as black ten of spades), compromise (purple or reddish-black ten of spades), and disruption (subject unable to see or make sense of what he saw). These authors have not followed up the determinants of these different responses. However, it would seem likely that they might be the result of cognitive styles (e.g., sharpening-levelling) or personal dispositions.

Psychologists working in the areas of motivation and learning have also been interested in the concept of expectation as a way of bringing together past experience and future goals or purposes. Thus a major similarity which holds together the expectation concepts of Tolman (1948), Rotter (1955) and Atkinson (1958) is that they are anticipations of reinforcement. Thus Tolman sees performance as determined jointly by the individual's "demand" for an object or goal and his expectations that certain behavior will lead him there. Such expectations are built up by the organism's discovery of means-ends relations in the environment; discriminanda become signs indicating that certain consequences (e.g., arrival in the goalvox) will be likely to follow certain responses (e.g., running to the right).

Rotter (1955) sees performance as determined by "reinforcement value", the degree of preference for a reinforcement to occur, and "expectancy", defined as the subjective probability that a given reinforcement will occur as a function of a specified behavior on the individual's part in a specific situation or situations.

Atkinson (1958) sees expectation, defined as probability of success at a task, given certain behaviors not only as an important determiner of choice, but also as itself influenced by the individual's level of need for achievement and fear of failure. Historically, his work stems from the studies of "level of aspiration," the degree of difficulty of the goal which an individual strives to reach. Such levels of aspiration seem to be determined by the attractiveness of success (reinforcement value in Rotter's terms), the "negative valence" for failure, and the individual's cognitive expectation of success and expectation of failure, expressed as a probability judgment, at a given level of difficulty. Atkinson's powerful contribution was to show that the individual's levels of need for achievement and fear of failure influence the individual's risk-taking tendencies. Individuals who are high in need for achievement and low in fear of failure are likely to choose tasks where the expection of success are failure is about equal, while individuals low in need for achievement and high in fear of failure are likely to choose tasks where the expectation for success is either very high or very low. It would also appear that these variables affect the choice of a task subsequent to success or failure.

Festinger (1957) and other social psychologists (Osgood and Tannenbaum, 1955; Heider, 1958; Newcomb, 1961) have proposed cognitive theories of motivation which center around the general proposition that individuals strive for "consistency" among their cognitions, feelings, and behavior (Zajonc, 1960). The frustration of expectation may be sufficient to initiate attempts at reduction of inconsistency. For our purposes, it is interesting to note that individuals may employ many different modes of inconsistency or dissonance reduction, depending on, among other things, the centrality of the expectation in the person's cognitive system, the immediate situation, and personality factors such as level of self-esteem (Watts, 1966).

There are many communalities running through the definitions of expectation offered by different psychologists. Expectations are oriented toward goals and hence may be thought of as anticipations of reinforcement. They are jointly determined by past experience, the immediate situation, and personal dispositions. Expectations are about behaviors, specifically those that will lead to desired reinforcements or away from potential pain. On the input side, attributes or characteristics of the situation function as cues to "arouse", or make relevant, certain expectations rather than others.

From the brief review of literature noted above, it would appear that personality dispositions should be taken into account both in selection of cues to which the individual responds as well as in the effect of frustration of expectation on performance. Some recent speculation provides a framework which integrates both personality and situational variables. Berlyne (1960) and Duffy (1957) among others postulate that frustration of expectation leads to arousal, which in turn bears an inverted U-shaped function to performance. Thus radical disconfirmations of expectations may lead to a more than optimum level of arousal and decrease performance while satisfaction of expectation may result in little arousal. Moderate frustration of expectation, however, increases arousal to some optimal level for performance. An implication of this is that the frustration of expectation will have differential effects on individual performance depending on whether or not it induces arousal near or at the optimal level. Persons who differ, say, in anxiety level are therefore likely to be differentially affected by frustration of expectation. One would expect that individuals who are high in anxiety and thus already in a relatively high state of arousal would be adversely effected by frustration of expectation, especially if the expectations concern critical dimensions for the individual. Similarly, we might argue that individuals who are high in the need for affiliation who had strong expectations of friendliness from others would suffer performance decrements if these expectations were not confirmed, since already high levels of motivation would exist. This formulation is, of course, similar to the Yerkes-Dodson Law which also describes an inverted U-shaped function between motivation and performance.

In this study, four individual characteristics were tapped: need for achievement, need for affiliation, intelligence and debilitating anxiety. Separate analyses were carried out for men and women. Considering these variables in the light of the above discussion, and in the light of a common sense analysis, what predictions can we make about the effects of satisfaction or frustration of expectation?

If we conceive of intelligence as a set of strategies for processing information (Hunt, 1961) and if we look at frustration of expectation as a motivational stimulus leading to greater utilization of such strategies, we can make the following prediction:

Hypothesis 1a: Individuals high in intelligence will perform more effectively (as indexed by final grade) when their expectations are frustrated than when they are satisfied.

Hypothesis 1b: Individuals low in intelligence will perform more effectively when their expectations are confirmed than when they are frustrated.

This would follow if we assume that individuals low in intelligence do not possess adequate information processing strategies, in which case the effect of arousal is likely to be negative or disruptive.

Hypothesis 2a: Individuals high in need for affiliation will perform more effectively when their expectations are satisfied than when they are frustrated. This should be true primarily for expectations concerning the quality of interpersonal relationships.

Hypothesis 2b: Individuals low in need for affiliation will perform more effectively when their expectations are frustrated.

Hypothesis 3a: Individuals who are high in need for achievement will perform more effectively when their expectations are satisfied than when they are frustrated. This should be primarily true for expectations concerning standards of excellence or evaluation.

Hypothesis 3b: Individuals low in need for achievement should perform more effectively when their expectations are frustrated.

As McKeachie points out (1961) there is some indication that women's performance is more likely to fit the optimal level of arousal paradigm than men's performance. Men high in need for achievement are more likely to perform more effectively simply on the basis of the presence of achievement cues.

Hypothesis 4a: Individuals who are high in debilitating anxiety will perform more effectively when their expectations are satisfied.

Hypothesis 4b: Individuals low in debilitating anxiety should perform more effectively when their expectations are frustrated.

For reasons which will become clear later, no predictions were made for combinations of variables (e.g., achievement and anxiety). Further, predictions are made only for those individuals whose expectations are "strong", that is, who believe that certain classroom characteristics should be present if they are to achieve success in the course. Individuals whose expectations are "weak", that is, who do not expect that certain classroom characteristics have any relevance to success, present special problems which will be discussed more fully below. Finally, an implied hypothesis is that there is no main effect for the frustration or satisfaction of expectation; implied or not, however, it certainly is an hypothesis which will be tested.

METHOD

Measures: Expectation and Perception

The instrument used in this study was derived from a 25 item form developed by McKeachie to assess student perceptions of the "Ideal Teacher." A factor analysis of this data extracted four factors, each of which had three items which loaded .4 or better on it. (See chapter III - 7) An "Expectations Questionnaire asks the student to rate the degree of importance each of the classroom characteristics has for his success in the course on a four point scale: Very Important (0), Important (1), Not Very Important (2), Unimportant (3). In a second sample this 12 item questionnaire was again factor analyzed. Since the number of items was only half of the

TABLE 1

EXPECTATIONS QUESTIONNAIRE AND FACTORS TO WHICH ITEMS ARE RELATED

INSTRUCTIONS. Students have different ideas about what is important in contributing to the success of a course. Listed below are a number of things which may be more or less important for you with respect to this course. Circle the letter or letters in the margin that stand for the applicable word or phrase in each case.

VI	I	NVI	U	1. Instructor puts outline of the day's lecture or discussion on the blackboard at the beginning of each class period. (Structure)
VI	I	NVI	U	2. Instructor announces examination in advance. (Feedback)
VI	I	NVI	U	3. Instructor sets very high standards for the students. (Achievement)
VI	I	NVI	U	4. Students in the class are friendly. (Warmth)
VI	I	NVI	U	5. Instructor makes it clear how each topic fits into total course. (Structure)
VI	I	NVI	U	6. Members of the class compete to do well. (Achievement)
VI	I	NVI	U	7. Instructor follows an outline closely. (Structure)
VI	I	NVI	U	8. Instructor announces before each test what kind of items will be in it: i.e., whether multiple choice, essay, etc. (Feedback)
VI	I	NVI	U	9. Instructor is personally friendly to me. (Warmth)
VI	I	NVI	U	10. When I speak in class I can always tell from the instructor's reaction whether what I said was right or wrong. (Feedback)
VI	I	NVI	U	11. The course work presents a real challenge to me. (Achievement)
VI	I	NVI	U	12. Instructor seems personally interested in each class member. (Warmth)

Name________________________ Sex_______ Date_______

Course enrollment: 100________ 101________ number included in the original analysis, one might expect some simplicication of factor structure. Indeed, two factors emerged, both of which were quite clearcut. The first factor was essentially the same as the earlier "warmth" factor (again using the criteria of items loading .4 or higher). The second factor had six items which loaded heavily on it. These were the items which comprised the original "structure" and "feedback" factors (see table 1). The three "achievement" items loaded at or near zero on both factors. The clear definition of these factors is attested to by the fact that heavily loading items on one factor loaded negligibly (below .1) on the other. The derivation of factor scores for subjects now become a problem. It was decided to derive factor scores based on the results of the second factor analysis.

There are three reasons for this decision. First, on theoretical grounds "interpersonal warmth" and "degree of structure and feedback" correspond to major dimensions which have been found to be meaningful in the group dynamics literature (e.g., Bales' sociomotional and task dimensions) and hence likely to be fruitful in this research on classroom groups. Second, an evaluation of the correlation matrices from the earlier sample indicates that a summary of the data into two factor scores would not be doing violence to the results (see Table 2). Third, even with the data rotated to simple structure, the "feedback" and "structure" scores are correlated .56.

The "perception questionnaire" was identical to the expectations questionnaire in terms of items, but asked the student to rate the degree to which each characteristic was present in the classroom: always present, usually present, occasionally present, never present.

Measures: Student Characteristics and Final Grade

Five characteristics were common across both samples: need for achievement, need for affiliation, debilitating anxiety, intelligence, and sex. Needs for achievement and affiliation were measured by the standard Thematic Apperception procedure as described by Atkinson (1958). Separate pictures were used for men and women. The measure of anxiety was the Alpert-Haber Achievement Scale, which taps two kinds of anxiety in terms of effect on performance: facilitating and debilitating. Only the latter score was considered here. In the first sample, the intellectual ability measure was the American Council on Education's Psychological Examination (1949 form) which every student at that time had taken upon entering the university. In the later sample, test scores from the verbal part of the Scholastic Aptitude Test were used. For the purposes of this report, the two tests were considered at least roughly comparable. In the second sample, four other measures were also available: study habits (SH), as assessed by an adaptation of the Brown-Holtzman questionnaire, Achiever Personality (AchP), Creative Personality (CP), and Social Science Interest (SSI), scales from Fricke's Opinion, Attitude, and Interest Survey (OAIS), which all students had taken on entering the university.

Subjects and Procedure

Data was collected on two independent samples, separated by five years.

The first sample consisted of students from 12 sections of Psychology 31, the first year psychology course at the University of Michigan, from whom data was collected as a part of a larger project on the characteristics of effective college teaching under a grant from the Fund for the Advancement of Education. The sample included 173 predominantly freshman students, 115 women and 58 men; however, dropouts, incomplete and missing data, and so on, accounted for a net sample size of 147, 104 women and 53 men. The sections were taught by six instructors, primarily graduate Teaching Fellows, accounting for two sections each. The greatest number of students in any one section was 30, and the smallest, 13. These were "lecture-discussion" sections.

The second sample (a replication sample, if you will) consisted of students from 29 sections of psychology 101 (equivalent to psychology 31). This sample included 484 predominantly freshmen students, 282 women and 202 men. Again, however, because of drop-outs, incomplete and missing data, and so on, the net sample size was 168, 104 women and 64 men, a rather drastic reduction. 16 instructors, also primarily graduate Teaching Fellows, were involved, and section sizes ranged from 33 to 18.

The expectations questionnaire and independent variable measures (needs for achievement and affiliation, debilitating anxiety) were administered to groups of students within the first week of the semester along this form in which students rated both the teacher and the course on a number of dimensions. Final grades were converted to standard scores within sections (X=50, s.d.=10).

Methods of Analysis

The nature of the data, in particular small sample size, made it difficult to use conventional Chi-square and Analysis of Variance. Extensive use was made of the sign test (see Siegel, 1956).

Since the use of the sign test here is somewhat out of the ordinary, a brief justification is in order. Let us consider first the treatment of the variables. Since earlier work has shown that it is important to look at more than two levels of a variable (e.g., high vs. low), three variables--intelligence, need for achievement and need for affiliation--were trichotomized. Debilitating anxiety and the four additional variables in the second sample--SH, AchP, CP, and SSI--were dichotimized. The Pretest and Posttest measures were dichtomized within the two dimensions of "warmth" and "feedback-structure". Individuals with strong expectations were called "Highs" (H) and those with weak expectations "Lows" (L). Similarly on the Posttest measure of perception, individuals were classified High or Low on their perception of warmth or feedback-structure characteristics of the classroom. Four "types" were generated: those who had strong expectations and perceived the relevant characteristic to be present in the classroom (HH), those who had strong expectations but did not perceive the relevant characteristics to be present in the classroom (HL), those who had weak expectations and perceived the characteristics not to be present (LL), and those who had weak expectations and perceived the characteristic to be present (LH).

This further reduces the number of subjects in each cell, but it did not seem proper to collapse these four groups into two, i.e., HL and LL groups collapsed into a "satisfied expectation" group and HL and LH into a "frustrated expectation" group. A moment's thought indicates why this is so. Remember that expectations here are of classroom characteristics leading to success in the course. In what sense, then, are a person's expectations "frustrated" when a characteristic he did not expect would lead him to success in the course is present in the classroom? Somehow there does seem to be a qualitative difference between this LH person and a HL person. This really reflects on the way in which "expectations" are conceptualized here and we will comment on this below.

But how will all of this effect the statistical analysis we can do? Table 3 provides an illustration. Included in this table are intelligence, Pretest warmth (Expectation), Posttest warmth (Perception), and final grade. When we are concerned with the effects of frustration or satisfaction of expectations, the second and third variables will always be in the table. Notice that well over 20% of the expected frequencies are less than five, and in such situations Siegel (1956, quoting Cochran) suggests that Chi-square not be used. Moreover, zero entries in certain cells, especially in the 1958 male group similarly made it impossible to run even simple one-way analyses of variance within levels of a single variable.

What are the possible solutions to the dilemma of statistically analyzing the effects of frustration and satisfaction of expectation? Let us begin by imagining the total contingency table for the later women's group; that is, a table which includes all the independent variables and the dependent variable, grade. To construct such a table one begins by setting up a single variable, say, intelligence, so that the data sheet is divided into three parts corresponding to the three levels into which this variable is split. Now each level of this variable is divided into three parts, corresponding to the trichotimization of need for affiliation. We continue this process of "nesting" one variable inside another until all variables are entered. In the sample we are considering, there are ten independent variables in the table, three of which are trichotimized and seven of which are dichotimized. The number of possible combinations in the table, that is, the number of theoretically different kinds of individuals in the sample, equals the number of splits in every variable multiplied together. For this table, this is 3264 cells into which one could theoretically fit a mean final grade.

But this is clearly ridiculous, since 3264 is a few thousand more cells than there are data points. Suppose, then, we take out of this enormous table four variables, two of which are pre and post test and the other two of which are any of those in which we are interested, e.g., intelligence and affiliation (see Table 4). Even though the number of subjects in each cell is still small (as noted above, especially in the first sample) and there may be no entries in some cells, it will still be possible to note the frequency with which, say, HL individuals who are high in intelligence get a better average grade than HH individuals three tests out of three. Keeping this result in mind, let us now sample from the large table, again selecting four variables, three of which are the

TABLE 2

INTERCORRELATIONS OF PRE AND POSTTEST ITEMS IN THE FIRST SAMPLE (MEN AND WOMEN) (note: negative correlations are underlined) (Correlations above .2 are significant at the .05 level; above .29, at the .01 level)

		PRETEST										MEN		POSTEST											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
PRETEST	1	--	--	$\underline{03}$	09	27	12	14	01	$\underline{10}$	11	12	33	06	--	$\underline{08}$	$\underline{15}$	11	$\underline{12}$	15	--	$\underline{15}$	02	06	$\underline{07}$
	2	Not enough range in item																							
	3	$\underline{20}$	--	--	12	19	30	$\underline{12}$	13	20	$\underline{13}$	38	08	$\underline{08}$	--	03	06	$\underline{12}$	$\underline{08}$	$\underline{23}$	--	18	$\underline{09}$	$\underline{23}$	$\underline{28}$
	4	21	--	11	--	12	33	$\underline{11}$	$\underline{28}$	38	$\underline{12}$	08	17	$\underline{07}$	--	$\underline{07}$	$\underline{03}$	$\underline{02}$	09	$\underline{14}$	--	$\underline{15}$	$\underline{23}$	$\underline{14}$	$\underline{08}$
	5	33	--	$\underline{23}$	08	--	24	31	$\underline{11}$	17	11	29	48	$\underline{06}$	--	33	14	$\underline{12}$	08	09	--	$\underline{23}$	03	17	$\underline{18}$
	6	28	--	04	$\underline{01}$	52	--	21	11	28	$\underline{13}$	52	27	$\underline{08}$	--	$\underline{17}$	09	$\underline{11}$	11	$\underline{18}$	--	$\underline{27}$	$\underline{06}$	$\underline{08}$	$\underline{00}$
	7	27	--	$\underline{17}$	$\underline{08}$	09	12	--	13	00	$\underline{00}$	03	21	$\underline{04}$	--	$\underline{03}$	$\underline{17}$	$\underline{13}$	$\underline{05}$	11	--	$\underline{09}$	$\underline{17}$	$\underline{11}$	10
	8	12	--	$\underline{12}$	04	08	28	$\underline{17}$	--	00	16	$\underline{08}$	11	08	--	$\underline{11}$	33	$\underline{08}$	$\underline{19}$	08	--	29	09	$\underline{18}$	19
	9	10	--	$\underline{11}$	23	12	16	04	21	--	08	33	21	16	--	$\underline{04}$	07	$\underline{15}$	28	$\underline{10}$	--	08	19	$\underline{02}$	$\underline{18}$
	10	$\underline{17}$	--	08	11	43	21	$\underline{01}$	19	29	--	23	38	13	--	03	$\underline{04}$	$\underline{09}$	$\underline{01}$	$\underline{03}$	--	$\underline{07}$	03	15	$\underline{21}$
WOMEN	11	$\underline{06}$	--	33	21	$\underline{11}$	04	$\underline{15}$	$\underline{11}$	12	$\underline{18}$	--	29	15	--	$\underline{21}$	$\underline{12}$	22	08	04	--	33	21	09	$\underline{24}$
	12	08	--	11	30	30	08	$\underline{30}$	$\underline{08}$	54	19	28	--	23	--	00	$\underline{12}$	$\underline{08}$	28	$\underline{17}$	--	$\underline{24}$	$\underline{13}$	32	$\underline{12}$
	1	13	--	17	$\underline{08}$	21	13	03	02	12	06	$\underline{01}$	$\underline{03}$	--	--	31	38	26	18	22	--	11	08	00	18
	2	Not enough range in item																							
	3	11	--	08	$\underline{18}$	$\underline{15}$	$\underline{03}$	02	01	$\underline{27}$	05	09	$\underline{01}$	28	--	--	03	08	19	09	--	14	05	45	$\underline{07}$
	4	08	--	02	13	--	$\underline{10}$	$\underline{18}$	23	20	30	16	13	15	--	$\underline{15}$	--	10	34	$\underline{09}$	--	26	11	$\underline{11}$	$\underline{14}$
	5	09	--	05	$\underline{10}$	$\underline{26}$	04	16	09	$\underline{16}$	11	36	23	12	--	40	23	--	18	34	--	54	26	28	22
POSTTEST	6	15	--	05	13	22	19	$\underline{09}$	11	0	20	$\underline{18}$	24	31	--	42	11	16	--	$\underline{09}$	--	$\underline{13}$	$\underline{22}$	31	$\underline{00}$
	7	$\underline{08}$	--	16	13	$\underline{19}$	11	12	20	14	19	41	21	$\underline{12}$	--	19	08	47	09	--	--	17	24	16	16
	8	Not enough range in item																							
	9	$\underline{14}$	--	22	25	20	24	$\underline{14}$	16	15	$\underline{05}$	30	24	--	--	14	21	18	12	--	--	--	13	28	47
	10	$\underline{11}$	--	13	11	$\underline{09}$	$\underline{06}$	$\underline{12}$	17	02	$\underline{02}$	$\underline{01}$	11	$\underline{05}$	--	$\underline{01}$	04	23	04	22	--	41	--	13	23
	11	$\underline{02}$	--	12	10	$\underline{09}$	$\underline{30}$	$\underline{09}$	$\underline{14}$	$\underline{22}$	$\underline{05}$	$\underline{06}$	16	$\underline{07}$	--	41	19	42	24	12	--	35	19	--	$\underline{16}$
	12	17	--	15	05	$\underline{12}$	11	$\underline{10}$	03	$\underline{07}$	$\underline{13}$	18	$\underline{10}$	29	--	15	01	31	14	29	--	43	25	23	--

TABLE 2b

INTERCORRELATIONS OF PRE AND POSTTEST ITEMS IN THE SECOND SAMPLE (MEN AND WOMEN) (note: negative correlations are underlined) (Correlations above .19 are significant at the .05 level; above .27, at the .01 level)

		PRETEST										MEN		POSTTEST											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
PRETEST	1	--	--	$\underline{03}$	03	37	06	18	07	$\underline{10}$	03	04	37	12	--	04	$\underline{14}$	$\underline{14}$	12	$\underline{13}$	--	$\underline{18}$	00	08	$\underline{07}$
	2	Not enough range in item																			--				
	3	$\underline{23}$	--	--	14	21	32	$\underline{04}$	10	24	$\underline{06}$	44	05	$\underline{10}$	--	00	09	$\underline{04}$	$\underline{02}$	$\underline{25}$	--	20	$\underline{17}$	$\underline{24}$	$\underline{22}$
	4	25	--	$\underline{06}$	--	10	45	$\underline{03}$	$\underline{26}$	45	$\underline{10}$	19	14	$\underline{09}$	--	04	$\underline{08}$	$\underline{01}$	00	$\underline{12}$	--	$\underline{18}$	$\underline{27}$	$\underline{03}$	$\underline{08}$
	5	39	--	$\underline{16}$	07	--	26	35	$\underline{08}$					$\underline{08}$	--	25	18	$\underline{12}$	16	04	--	$\underline{28}$	01	20	$\underline{20}$
	6	22	--	02	$\underline{06}$	61	--	27	14	33	$\underline{02}$	45	28	$\underline{04}$	--	$\underline{10}$	02	$\underline{13}$	11	$\underline{07}$	--	$\underline{33}$	$\underline{14}$	$\underline{13}$	03
	7	26	--	$\underline{15}$	$\underline{04}$	18	07	--	19	05	$\underline{02}$	$\underline{02}$	23	$\underline{00}$	--						--	$\underline{12}$	$\underline{11}$	$\underline{06}$	10
	8	14	--	$\underline{13}$	03	10	24	$\underline{12}$	--	02	$\underline{19}$	12	$\underline{13}$	04	--	$\underline{13}$	42	$\underline{02}$	$\underline{22}$	06	--	38	11	$\underline{21}$	10
	9	00	--	$\underline{18}$	35	18	10	03	14	--	02	26	25	19	--	$\underline{01}$	09	$\underline{17}$	22	$\underline{05}$	--	00	$\underline{13}$	$\underline{05}$	$\underline{13}$
	10	$\underline{04}$	--	03	06	52	28	$\underline{03}$	25	33	--	25	44	11	--	06	$\underline{07}$	$\underline{12}$	02	$\underline{06}$	--	$\underline{10}$	00	18	$\underline{24}$
WOMEN	11	$\underline{18}$	--	30	18	$\underline{17}$	01	$\underline{11}$	$\underline{13}$	07	$\underline{05}$	--	24	18	--	$\underline{30}$	$\underline{15}$	12	15	06	--	26	13	07	$\underline{29}$
	12	$\underline{08}$	--	17	34	32	05	$\underline{32}$	$\underline{04}$	45	15	37	--	37	--	$\underline{05}$	$\underline{17}$	$\underline{05}$	36	$\underline{07}$	--	$\underline{33}$	$\underline{07}$	24	$\underline{14}$
POSTTEST	1	10	--	$\underline{06}$	$\underline{11}$	17	16	07	09	12	15	$\underline{08}$	$\underline{00}$	--	--	20	24	21	19	24	--	17	04	00	13
	2	Not enough range in item																							
	3	06	--	07	$\underline{21}$	$\underline{18}$	$\underline{06}$	05	04	$\underline{30}$	02	06	$\underline{04}$	31	--	--	00	05	22	09	--	17	02	59	$\underline{04}$
	4	04	--	14	10	--	$\underline{01}$	$\underline{09}$	14	11	21	07	04	06	--	$\underline{06}$	--	01	25	$\underline{00}$	--	03	38	$\underline{02}$	$\underline{05}$
	5	03	--	04	$\underline{06}$	$\underline{22}$	00	12	05	$\underline{12}$	07	32	19	08	--	36	19	--	14	30	--	50	22	24	18
	6	17	--	$\underline{05}$	16	25	24	$\underline{03}$	09	03	26	$\underline{16}$	22	34	--	38	07	18	--	$\underline{03}$	--	$\underline{03}$	$\underline{23}$	39	$\underline{05}$
	7	$\underline{02}$	--	05	06	$\underline{12}$	04	05	13	07	12	34	14	$\underline{05}$	--	11	01	40	02	--	--	10	17	09	09
	8	Not enough range in item																							
	9	$\underline{11}$	--	29	$\underline{09}$	18	13	17	$\underline{07}$	15	14	$\underline{04}$	27	27	--	14	08	25	22	16	--	--	05	20	39
	10	$\underline{13}$	--	15	10	$\underline{07}$	$\underline{09}$	18	07	$\underline{04}$	$\underline{03}$	08	$\underline{03}$	$\underline{08}$	--	$\underline{00}$	$\underline{04}$	22	$\underline{04}$	29	--	32	--	08	19
	11	$\underline{01}$	--	14	$\underline{13}$	$\underline{34}$	$\underline{13}$	$\underline{18}$	$\underline{18}$	$\underline{09}$	$\underline{10}$	20	$\underline{03}$	28	--	37	15	38	20	08	--	31	15	--	$\underline{12}$
	12	09	--	20	08	$\underline{15}$	14	13	00	$\underline{10}$	$\underline{10}$	21	$\underline{13}$	32	--	18	04	34	17	32	--	46	28	26	--

TABLE 3

THE INTERACTION OF INTELLIGENCE, PRETEST WARMTH, AND POSTTEST WARMTH IN RELATION TO FINAL GRADE -- MALES, 1958

INTELLIGENCE	EXPECTED WARMTH	PERCEIVED WARMTH	FINAL GRADE (MEAN SCORE) AND N PER CELL
High	Hi	Hi	49.25 (4)
	Hi	Lo	49.5 (2)
	Lo	Hi	40 (1)
	Lo	Lo	45 (1)
Medium	Hi	Hi	40 (2)
	Hi	Lo	55 (2)
	Lo	Hi	55 (3)
	Lo	Lo	49 (4)
Low	Hi	Hi	47.20 (5)
	Hi	Lo	52.33 (3)
	Lo	Hi	48.62 (6)
	Lo	Lo	45 (2)

TABLE 4

THE INTERACTION OF INTELLIGENCE, NEED FOR AFFILIATION, PRETEST WARMTH AND POSTTEST WARMTH IN DETERMINING FINAL GRADE -- FEMALE SECOND SAMPLE

INTELLIGENCE	NEED AFFILIATION	EXPECTED WARMTH	PERCEIVED WARMTH	FINAL GRADE
High	Hi	Hi	H	50 (3)
			L	58 (3)
		Lo	H	52.33 (3)
			L	48.5 (1)
	Mid	Hi	H	58 (3)
			L	62.5 (1)
		Lo	H	50 (3)
			L	56.6 (6)
	Lo	Hi	H	48.5 (1)
			L	51.5 (2)
		Lo	H	50 (2)
			L	49.5 (4)
Middle	Hi	Hi	H	62.5 (1)
			L	49.6 (5)
		Lo	H	40 (1)
			L	49.2 (8)
	Mid	Hi	H	---
			L	62.5 (1)
		Lo	H	62.5 (2)
			L	48.5 (6)
	Lo	Hi	H	---
			L	40 (3)
		Lo	H	40 (1)
			L	47.3 (3)
Low	Hi	Hi	H	50 (2)
			L	40 (3)
		Lo	H	40 (1)
			L	35.2 (3)
	Mid	Hi	H	48.5 (2)
			L	46.25 (4)
		Lo	H	40 (2)
			L	49.5 (4)
	Lo	Hi	H	40 (2)
			L	47.3 (7)
		Lo	H	50 (2)
			L	52.4 (4)

same--intelligence, pre and posttest--but substituting need for achievement for need for affiliation (see Table 5). Again we test the same hypothesis, and find that high intelligence HL individuals perform better than high intelligence HH individuals in two of the two tests which can be made; the third test cannot be made because there are no subjects in one of the cells. This gives five tests in favor of the hypothesis and no tests which are not.

We continue to construct tables, holding the three variables constant and substituting the fourth until the possibilities in the large table are exhausted. The only stipulation is that the variables that are sampled from the large table are uncorrelated. Table 6 indicates the intercorrelations between variables for both men and women in both samples. Note, for instance, that if a test of this same hypothesis was made for males in the second sample, only affiliation or achievement would be used in the sign test. The final step is to consult the appropriate statistical table to see whether or not the number of tests in a certain direction could have occurred by chance. To recapitulate, then:

1. Small sample size made standard statistical tests inadequate.

2. A sign test, which is sensitive to consistent trends in data, was employed.

3. The procedure involves holding certain variables constant, successively substituting others which are uncorrelated with each other, and testing hypotheses.

It should be stressed that the sign test is a weak test in that it will not allow one to test the significance of difference between scores but, as used here, is sensitive to trends in the data.

RESULTS

Tables 7 and 8 present the results of the sign test analysis for all levels of the independent variables including both men and women across the two samples. The comparisons are between HH (expectations satisfied) group and the HL (expectation frustrated) group, and between the LH and LL groups. As expected, there is no overall main effect for expectation or satisfaction on either the warmth or feedback-structure factors. The asterisk indicates those significant results which appear to be accounted for by perception (i.e., posttest score) alone. It should be noted that this occurs only three times and only for the warmth factor. The fact that women who are high in affiliation do better in classrooms characterized by warmth cues is a finding already reported by McKeachie (1961) and for these women also seems to be true for persons in the middle level of intelligence. Men who have moderate levels of need for achievement appear to get higher grades when warmth is not present.

Hypothesis 1a, that frustration of expectation would facilitate performance for individuals high in intelligence is substantially confirmed. The only group for whom this is not true are men on the feedback-structure factor. Hypothesis 1b, that confirmation of expectations would facilitate

TABLE 5

THE INTERACTION OF INTELLIGENCE, NEED FOR ACHIEVEMENT, PRETEST WARMTH AND POSTTEST WARMTH IN DETERMINING FINAL GRADE -- FEMALE SECOND SAMPLE

INTELLIGENCE	NEED FOR ACHIEVEMENT	PRETEST WARMTH	POST WARMTH	FINAL GRADE
High	Hi	Hi	H	40 (3)
			L	---
		Lo	H	62.5 (1)
			L	58.5 (1)
	Mid	Hi	H	58.5 (4)
			L	60.25 (4)
		Lo	H	49.2 (2)
			L	---
	Lo	Hi	H	49.2 (5)
			L	50.5 (1)
		Lo	H	40 (1)
			L	52.4 (5)
Middle	Hi	Hi	H	58.5 (1)
			L	52.4 (5)
		Lo	H	---
			L	58.5 (1)
	Mid	Hi	H	58.5 (3)
			L	47.3 (3)
		Lo	H	58.5 (5)
			L	51.6 (5)
	Lo	Hi	H	58.5 (3)
			L	58.5 (3)
		Lo	H	---
			L	58.5 (5)
Low	Hi	Hi	H	5..5 (2)
			L	---
		Lo	H	50 (2)
			L	58.5 (2)
	Mid	Hi	H	41.23 (1)
			L	50 (3)
		Lo	H	58.5 (3)
			L	49.2 (2)
	Lo	Hi	H	52.4 (5)
			L	40 (8)
		Lo	H	40 (1)
			L	40 (2)

TABLE 6

INTERCORRELATIONS OF INDEPENDENT AND DEPENDENT VARIABLES FOR MEN AND WOMEN IN FIRST AND SECOND SAMPLES

		Ach	Aff	DA	SH	Achp	CP	SSI	Grade
INtel.	man 1st sample	-.12	-.16	-.19					.52*
	woman 1st	.08	.02	-.16					.37*
	men 2nd	-.17	-.09	-.18	.01	-.07	.31*	.04	.44*
	women 2nd	.05	.11	-.15	-.10	.09	.07	.11	.33*
Ach	men 1st		.28*	.10					.12
	women 1st		-.13	.12					-.08
	men 2nd		.39*	.19	.05	-.17	-.01	.03	-.10
	women 2nd		-.14	.15	.20*	-.12	.12	-.02	.13
Aff	men 1st			-.17					.06
	women 1st			-.15					.18
	men 2nd			-.11	.13	.26*	.03	.14	.14
	women 2nd			-.17	.10	.13	-.09	.07	.04
DA	men 1st								
	women 1st								
	men 2nd				-.33*	.04	-.14	-.07	.11
	women 2nd				-.19	.01	-.17	-.31*	-.10
SH	men 2nd					.10	-.18	-.00	.24*
	women 2nd					.26*	-.01	-.31*	.20*
AchP	men 2nd						-.35*	-.18	.11
	women 2nd						-.16	-.11	.32
CP	men 2nd							.21*	.00
	women 2nd							.33*	-.03
SSI	men 2nd								.11
	women 2nd								.16
Grade	men 1st								
	women 1st								
	men 2nd								
	women 2nd								

*Significant at the .05 level

TABLE 7

THE INTERACTION OF THE FRUSTRATION OR SATISFACTION OF EXPECTATIONS (HH VS. LL, LL VS. LH) OF WARMTH AND INTELLIGENCE, ACHIEVEMENT, AFFILIATION AND ANXIETY IN RELATION TO COURSE GRADE--SIGN TEST ANALYSIS

Variable	Type	Men (1st sample)	Men (2nd sample)	Combined	Women(1st sample)	Women(2nd sample	Com-bined
Hi Intel.	HH	0	0	0 p=.01	6	0	6
	HL	2	4	6	2	10	12
	LL	0	0	0	1	5	6
	LH	2	6	8 p=.04	7	3	10
Mid Intel.	HH	0	6	6	6	6	12
	HL	4	0	4	0	2	2 p=.06*
	LL	0	3	3	2	4	6
	LH	5	2	7	6	5	11
Lo Intel.	HH	3	1	4	2	9	11
	HL	1	2	3	5	2	7
	LL	0	3	3	4	4	8
	LH	3	0	3	2	6	8
Hi Ach.	HH	0	6	6	5	5	10
	HL	1	1	1	2	5	7
	LL	3	8	8	5	5	10
	LH	3	6	6	2	8	10
Mid. Ach.	HH	0	3	3	4	6	10
	HL	4	4	8 p=.11	3	10	13
	LL	0	4	4	5	6	11
	LH	4	0	4	2	10	12
Lo Ach.	HH	1	0	1	5	11	17
	HL	3	4	7 p=.04	0	5	5 p=.01*
	LL	1	6	7	3	9	12
	LH	3	4	7	5	4	9
Hi Aff.	HH	0	2	2	6	6	12
	HL	0	2	2	0	3	3 p=.01*
	LL	0	7	7	2	1	3
	LH	4	0	4	4	9	13
Mid Aff.	HH	3	7	10	5	3	8
	HL	4	1	5	3	5	8
	LL	2	3	5	3	5	8
	LH	3	4	7	4	4	9
Lo Aff.	HH	0	4	4	3	3	6
	HL	5	4	9 p=.13	4	5	9
	LL	1	0	1	3	6	9
	LH	3	7	10 p=.02	2	3	5
Hi Anx.	HH	9	9	11	5	4	9
	HL	0	0	4	3	6	9
	LL	1	3	6	3	2	5
	LH	5	5	10	6	7	13 p=.05
Lo Anx.	HH	0	4	4	6	5	11
	HL	3	7	10 p=.09	1	4	5
	LL	1	3	4	5	8	13
	LH	5	7	12 p-.06	3	0	3 p=.01

*difference is a function of perception score alone

TABLE 8

THE INTERACTION OF THE FRUSTRATION OR SATISFACTION OF EXPECTATIONS OF FEEDBACK-STRUCTURE (HH VS. HL, LL VS. LH) AND INTELLIGENCE, ACHIEVEMENT, AFFILIATION AND ANXIETY IN RELATION TO COURSE GRADE -- SIGN TEST ANALYSIS

Variable	Type	Men (1st sample)	Men (2nd sample)	Combined	Women(1st sample)	Woman(2nd sample)	Combined
Hi Intel.	HH	1	0	1	0	1	1
	HL	0	2	2	7	10	17 p=.001
	LL	4	5	9	2	7	14
	LH	0	4	4	5	4	9
Mid Intel.	HH	0	3	3	3	4	7
	HL	3	3	6	4	4	8
	LL	2	3	5	4	3	7
	LH	2	3	5	1	4	5
Lo Intel.	HH	2	0	2	1	10	11
	HL	3	5	8 p=.06	6	1	7
	LL	1	4	5	2	2	4
	LH	3	1	4	4	9	13 p=.03*
Hi Ach.	HH	3	2	5	1	2	3
	HL	0	2	2	6	3	9 p=.07
	LL	1	2	3	2	5	7
	LH	4	5	9 p=.07*	5	1	6
Mid Ach.	HH	1	2	3	4	9	13
	HL	1	0	1	3	1	4 p=.03
	LL	5	7	12	7	2	9
	LH	1	1	2 p=.006	0	6	6
Lo Ach.	HH	0	0	0	2	3	5
	HL	3	4	7 p=.008	4	7	11 p=.11
	LL	3	3	6	0	3	3
	LH	2	4	6	5	7	12 p=.02
Hi Aff.	HH	2	1	3	3	7	10
	HL	1	7	8 p=.11	3	2	5
	LL	2	1	3	3	1	4
	LH	2	7	9 p=.07	4	7	11 p=.06*
Mid Aff.	HH	2	0	2	3	8	11
	HL	1	4	5	2	3	5 p=.11
	LL	0	5	5	3	10	13
	LH	3	1	4	4	1	5 p=.05
Lo Aff.	HH	0	3	3	2	3	5
	HL	3	2	5	6	9	15 p=.02
	LL	6	0	6	3	0	3
	LH	0	7	7	4	10	14 p=.006
Hi Anx.	HH	3	2	5	3	8	11
	HL	5	55	10	6	5	11
	LL	4	2	6	1	3	4
	LH	0	7	7	5	7	12 p=.04
Lo Anx.	HH	0	3	3	3	5	8
	HL	0	3	3	6	8	14
	LL	3	7	10	4	7	11
	LH	6	1	7	5	5	10

*difference is a function of perception score alone performance for individuals high in need for affiliation, were by and large not confirmed. Females high in affiliation whose expectation of warmth were confirmed did do better, but this result, as noted above, can probably be accounted for by the effect of the presence of warmth cues on high affiliation women. The prediction that frustration or satisfaction of expectations regarding feedback-structure would not be important for individuals high in need for affiliation was also not confirmed. Men high in need for affiliation perform more effectively when their expectations regarding this factor are frustrated.

Hypothesis 2b, that individuals low in need for affiliation would do better when their expectations were frustrated, was confirmed only in part. Again the results differ by sex and kind of expectation. Males low in affiliation perform more effectively when their expectations of warmth are frustrated, while women who are low in need for affiliation perform better when their expectations for feedback-structure are frustrated. A comparison of the performance of these two groups by the sign test indicates no significant difference.

Hypothesis 3a, that satisfaction of expectation will facilitate performance for individuals high in need for achievement, was not confirmed. In fact, women who were high in achievement and whose expectations of feedback-structure were frustrated performed more effectively. Only men high in achievement whose expectations of warmth were confined performed better.

Hypothesis 3b, that frustration of expectation would facilitate performance for individuals low in need for achievement, fared somewhat better. Here in fact it is clear that results for both men and women on the feedback-structure factor conform to the prediction. Results for the warmth factor are more complex. Here men low in need for achievement do better when their expectations are frustrated, while women do better when their expectations are confirmed. Although need for achievement and debilitating anxiety are not correlated in these samples, it may that men who are low in need for achievement and high in anxiety, perhaps by chance tend to be concentrated in the satisfied expectation group (HH). Since anxiety is negatively correlated with grades, this might account for the results. Similar arguments could be made for women and also for the effects of intelligence, which is positively correlated with grades. However, there is no significant tendency for any one group of subjects to be concentrated in HH, HL, LH, or LL groups.

Some interesting results appear when one looks across levels of need for achievement. For women on the feedback-structure factor, a kind of curvilinearity is evident, with individuals in the midrange of this variable profiting from satisfaction of expectation and person high and low in the variable profiting from frustration of expectation. It should again be noted that the results for males high and low in need for achievement are precisely in accord with the original hypotheses.

Hypothesis 4a, that satisfaction of expectation will facilitate performance for individuals high in debilitating anxiety is not confirmed. In fact, there appears to be an interesting interaction for men between frustration of expectation and kind of expectation and level of anxiety. Men who are high in debilitating anxiety perform more efficiently only when their expectation of feedback-structure is frustrated. Hypothesis 4b, that individuals who are low in debilitating anxiety will perform more efficiently when their expectations are frustrated, holds only for men on the warmth factor.

Overall, the results which best conform to the original predictions come from men in relation to warmth expectations. Individuals who are either high in intelligence, low in achievement, low in affiliation or low in debilitating anxiety appear to perform most efficiently when their expectations for interpersonal warmth are frustrated, while men high in achievement do best when their expectations of warmth are satisfied. Within the warmth factor, there is only one group whose performance runs opposite to prediction. These are women who are low in need for achievement and who perform better when their expectations are confirmed. Interestingly, this is the only place in which the results for men and women are directly opposite. It should be noted that women who are low in need for achievement are not more anxious and it is clear that if we compare low achievement-high anxiety women against low achievement-low anxiety women in both the first and second samples there is no interaction for satisfaction or frustration of expectation (although the Ns here are very small).

For the feedback-structure factor, the results are less supportive of the hypotheses. For men, only one prediction is confirmed, and that is for low need for achievement (better performance with frustration of expectation). For women, two of the predictions are confirmed: high intelligence and low need for achievement individuals perform better when their expectations for feedback-structure are frustrated.

On two occasions, the results across expectation factors correspond. Men who are low in achievement perform best when either warmth or feedback-structure expectations are frustrated. There does not seem to be any joint effect operating here; that is, individuals who have both expectations frustrated do not perform more effectively than individuals with only one or the other expectation frustrated. Similarly, women who are high in intelligence perform better when either warmth or feedback-structure expectations are frustrated. In one case, frustration of expectations of warmth works in the opposite direction from feedback-structure. Women who are low in need for achievement do better when expectations of feedback-structure are frustrated but perform more poorly when expectations of warmth are frustrated.

The Effect of Satisfaction and Frustration of "Weak" expectations on Final Grade

As noted above, a weak expectation is one where the person indicates that a given classroom characteristic is of little or no importance for his success in the course. Again, our measurement technique makes interpretation of the terms "satisfaction" or "frustration" ambiguous. In fact, when LH individuals get better grades than LL individuals, one might simply argue that the presence of the characteristic, rather than "frustration of expectation" was the major determinant. However, this would appear to be the case for only a few of such instances. Again, women high in need for affiliation get better grades when warmth is present in the classroom. Similarly, men who are low in intelligence or high in need for achievement perform better when the class is characterized by structure and feedback (at least, as they perceive it). Beyond this, however, expectations and post-course perceptions seem to operate jointly even here in influencing performance for certain people. Males who are high in intelligence do best when weak expectations of warmth are "frustrated" (LH group). A similar effect across sexes holds for individuals high in need for affiliation whose expectations of feedback-structure are "frustrated".

Other results again point up sex and type of expectation differences. Males who do best when their weak expectations of warmth are "satisfied" (LL group) are those low in need for achievement. Women who do best when their weak expectation of warmth is "satisfied" are those low in debilitating anxiety. Similarly, men in the middle level of need for achievement perform better when their expectations of feedback-structure are "satisfied" as do women in the middle level of need for affiliation.

As far as "frustration" of weak expectation of feedback-structure is concerned, men high in need for affiliation perform better when this occurs. Women who are low in need for achievement, who are high or low in need for affiliation or low in debilitating anxiety perform better when "frustration" occurs. With regard to levels of need for affiliation for women on this factor, it is interesting to note a kind of curvilinearity, with women in the middle level of this variable profiting from "confirmation" (LL) of expectation and women high and low profiting from "frustration" (LH) of expectation.

Finally, as far as "frustration" of weak expectations of warmth are concerned, men who are low in affiliation or low in debilitating anxiety get better grades under these conditions, as do women who are high in debilitating anxiety.

Taken as a whole, the pattern of these results is, I think, quite important for the study of expectations in the classroom, as the discussion below indicates. For the moment, however, we will simply note that their are points at which the results for "strong" and for "weak" expectations converge. The frustration of expectations of warmth, be it HL or LH, enhances performance for all individuals who are high in intelligence. It also facilitates performance for men who are either low in need for affiliation or low in debilitating anxiety. For the feedback-structure factor, men high in need for affiliation whose expectations are frustrated (both HL and LH) as well as women who are low in achievement or low in affiliation perform more effectively. In only two cases is there such a convergence for the satisfaction of expectation (HH or LL), for men high in need for achievement on the warmth factor and women in the middle level of need for affiliation on the feedback-structure factor.

Relationships of Independent Variables to Expectations and Perceptions

It has already become obvious that student perception of the presence or absence of warmth or feedback and structure may by itself serve to facilitate or depress performance in the course. Some related findings are the relationship of the independent variables to both expectations and perceptions. We have already indicated that none of the independent variables are related to HH, LH, HL, or LL groupings. Similarly, (and somewhat unexpectedly) none of the independent variables are related to expectation scores across samples. In the first sample, debilitating anxiety was correlated .36 with feedback-structure expectations; this correlation is .05 and .1 for women in the second sample. Intelligence in males is correlated -.48 with expectations of feedback-structure in the second sample, but only .08 with the same expectations in the first sample.

However, if we look at individual item correlations, some interesting patterns emerge across samples. Taking each variable separately, intelligence is positively related to item 11--"Course presents a real challenge to me"--for both men (.32, 1st sample; .3, 2nd sample, p=.05) and women (.28, 1st; .24, 2nd, p=.05) and negatively related to item 7--"Instructor made it clear how each topic fit into total course"--also for both men (-.31, 1st; -.24, 2nd) and women (-.26, 1st; -.29, 2nd). Interestingly, intelligence is also correlated positively with the perception of "Instructor followed outline closely" but only for men (.36, 1st; .31, 2nd).

Three other relationships between single independent variables and expectations occur. There is a negative correlation which just reaches significance between debilitating anxiety and item 11--"Course work presents a real challenge"--for men (-.21, 1st; -.22, 2nd). That is, men who are more anxious also are less likely to feel that challenging course work is important for their success in the course.

Debilitating anxiety is correlated with four separate items: "Instructor puts outline on board" (.34, 1st; .27, 2nd); "Instructor announces examinations in advance" (-.28, 1st; -.39, 2nd); "Students in class are friendly" (-.25, 1st; -.23, 2nd); and "Instructor was personally friendly to me" (-.23, 1st; -.27, 2nd). These last two items are, of course, correlated highly with each other, above .4 in both samples. This seems to be a "close-distant" dimension; the class where the person high in anxiety expects to do best is one which is quite structured and where teacher and students alike do not try to establish close, friendly relationships.

Finally, there is a correlation between need for affiliation in women and three items: "Instructor announces exams in advance" (.31, 1st; .37, 2nd); "Students in class are friendly" (.35, 1st; .32, 2nd); and "I could always tell from the instructor's reaction whether I was right or wrong when I spoke in class" (.31, 1st; .25, 2nd). Interestingly, these items are not correlated significantly with each other. It appears that "friendliness" for high affiliation women contains some element of evaluation as well.

DISCUSSION

Expectations have been found to have important effects on success in therapy (Goldstein, 1962) and on the outcomes of "objective" scientific experiments in psychology (Rosenthal, 1963). These data show that expectations must also be considered in the prediction of success in the Introductory psychology course, as this is indexed by final grade.

But now we are confronted with the problem of shedding some light on the meaning of the operation of expectations here. First, how did our "optimal level of arousal" notion fare? The results make it clear that, while such an explanation may at least partially account for the finding, they cannot account for all of them . Particularly puzzling are those individuals who perform opposite to an "optimal level" prediction: men high in need for achievement or women low in need for achievement with respect to warmth, and high need for achievement women or men high in affiliation or debilitating anxiety with respect to feedback-structure.

A number of possibilities suggest themselves. First, it may be that certain individuals who are high in these need-states are not pushed beyond their optimal level by the frustration of these expectations. Let us take women high in need for achievement as an example. It may very well be that these women were in fact pushed to some optimal level by the frustration of feedback-structure expectations. To assess this directly, we might ask these individuals about their general motivation to work in the course, how busy they were, how enjoyable it was, and the extent to which they felt comfortable. From our data, we would expect high achieving women whose expectations of feedback-structure were frustrated to say more of these things than when their expectations were satisfied. But why should the frustration of these expectations not push these women past their optimal level? One reason may be that these expectations are only moderately important to these women and that there are others which we are not tapping that are even more important. Thus the frustration of feedback-structure expectations is only slightly arousing. Information about the importance of expectations in relation to one another is not available to us but suggests that, if the form were readministered, it would be advisable to have the student rank-order the items in terms of importance to him. Space might be provided for the student to indicate other characteristics which he personally sees as important but which are not on the form.

It appears to me also that one often gets led astray by implicit assumptions about the nature of variables such as need for achievement, which immediately calls to mind such situational cues as standards, evaluation and so on. It is not totally perplexing, however, that certain high achievers see a warm interpersonal environment as important. It may be that such an environment is particularly anxiety-reducing or comforting to a competitive male. I think it is important to note here that most instructors in these samples were male; perhaps a warm, friendly male instructor is less threatening to competitive male students.

The question of salience of a dimension for an individual may also help us to explain the sex difference in low achievers for the frustration or satisfaction of warmth expectations. It seems reasonable that women who are low in need for achievement would see success in a course as dependent upon their social skills or skills in interpersonal relations and this is what warmth may mean to them. While this may be true for men as well, the absence of warmth may be more easily rationalized since the culture values independence more on the part of men. Moreover, this value may serve as additional motivation to perform successfully for men who are low in achievement and whose expectations of warmth are frustrated. On the other hand, women low in need for achievement may feel especially inferior in relation to classmates, and warmth may be motivating because it raises self-esteem.

This leads us, however, to a more important consideration. What in fact is the meaning of any given classroom characteristic for a particular individual? The relationship of certain need-states to individual items on the expectation measure shows us that this is a complicated matter. For instance, women high in debilitating anxiety seem to prefer both students and teachers to remain at a distance, but for the teacher to be fairly well structured. This structured but distant relationship with the teacher does not seem to mean that the teacher should be uninterested in the student; notice that the item--"Instructor seems personally interested in each class member"--does not correlate with debilitating anxiety in women. This suggests that there is one particular interpersonal environment in which women high in debilitating anxiety function most optimally and it is not an environment where the teacher is warm, friendly and permissive.

Another example of the subtle nature of expectation which students bring to the learning situation is the pattern of relationships for women high in need for affiliation. It appears to be the case that while these women prefer to be in a class where students are friendly, as one might expect, they also expect to be more successful when the instructor's reaction to their contributions in class is easily interpretable. Is this the way in which high need for affiliation women establish a relationship with the teacher? Is it an important form of reassurance for them? Veroff and Shipley (1958) have speculated that there is both an approach and avoidance component of the need for affiliation, the latter being a "fear of rejection" motivation. Perhaps this is what is reflected here.

If the operation of expectations depends on salient themes in the individual's life and if the same expectation may be held by different individuals for many reasons, as this analysis suggests, then similarly the effect of "frustration" or "satisfaction" of "weak" expectations may be multi-determined. Of particular interest are individuals who say that warmth or feedback-structure is not important for success in the course, but who are more successful when such characteristics are present in the classroom. For expectations of warmth, these are men high in intelligence, low in affiliation or low in debilitating anxiety and women who are high in anxiety. For expectations of feedback-structure, it is men high in affiliation and women low in achievement, high in affiliation, low in affiliation or high in debilitating anxiety. The simplest explanation, of course, is that these persons, for one reason or another, haven't yet learned or become aware of the importance of the presence of these characteristics for their successful performance in the course. This argument is vitiated at least in part since there is no main effect for simple presence of the characteristics for the subject's performance (at least for the subjects just mentioned). However, it still might be argued that relative to individuals who say that characteristics are not important for success and perceive the characteristic to be absent (LL), there is some motivational effect.

Another possibility, however, is that denial, whether conscious or unconscious, is operating. One finds it difficult to understand, for instance, why women who are high in anxiety should say that structure and feedback is unimportant, since we have so much reason to expect that highly anxious individuals perform better in well-structured situations. In fact, these women do perform better when they perceive greater structure in the classroom. But let us consider: when do people in fact use a "defense" such as denial? Most probably when they are in a state of conflict. In this case, let us assume that it is an approach-avoidance conflict; certain individuals anticipate positive reinforcement if certain characteristics are present in the classroom, but also fear punishing consequences associated with those same characteristics. For instance, for the highly anxious women, well-structured classrooms may reduce anxiety on one hand, but also raise the issue of evaluation which may be particularly threatening. In such a situation, it is not inconceivable that some students would deny to others and to themselves that structure had any importance for them. Similarly, some subjects high in need for affiliation may deny that feedback and structure is important for them because while they anticipate that it will help them to better grades and what-have-you, they also sense that high structure is associated with distance and/or negative evaluation on the part of the teacher and this arouses a fear of rejection.

I would finally like to add one more explanatory construct which may also help to account for the results. In On Shame and the Search for Identity, Helen Merrell Lynd writes: "(the child's) developing sense of himself and the developing sense of the world about him increase concurrently. Expectation and having expectation met are crucial in developing a sense of coherence in the world and in himself.

"Sudden experience of a violation of expectation, of incongruity between expectation and outcome, results in a shattering of trust in oneself, even in one's own...skill and identity, and in the trusted boundaries or framework of the society and the world one has known. As trust in oneself and in the outer world develop together, so doubt of self and of the outer world are also intermeshed..." (1958, Pp. 45-6). Expectations about the environment are intertwined with expectations about, and attitudes toward, the self. Is it possible that frustration or satisfaction of expectations about the classroom result in changes in feelings or perceptions of the self? Is it possible that the frustration of expectation leads to reduced self-esteem and that this motivates certain individuals to greater effort? or vice-versa for other individuals? Zimbardo and Formica (1963), for instance, have shown that individuals high in self-esteem avoid situations which could potentially reduce this. Deutsch, Krause and Rosenau (1962) have suggested that dissonance reduction is motivated by the need to defend self-esteem. Might it be, as suggested earlier, that women low in need for achievement are so low in self-esteem that lack of warmth is extremely punishing for them? This would certainly seem to be a line worth pursuing.

Lest it seem that I am overly optimistic about the nature of these results, let me say that there are many difficulties here. The sign-test analysis only reveals consistent trends in the data; it may be that the absolute differences between the various subgroups is quite small. An analysis of the results from the combined samples will allow us to say with more certainty that these differences are significant, although inspection of the data indicates that they probably are. It may also be important to do an analysis of individual items as well as factor scores; in fact, one might build scales from the patterns of correlations of individual variables with expectation items. The combination of independent variables in a critical issue here. Our analysis involved simple relationships and it will be of great interest to see what effects frustration or satisfaction of expectations has when patterns of independent variables are taken into account.

The instrument itself has its faults as we have already noted. Those characteristics which a student feels will lead to success in the course are not necessarily those which he expects will be typical of an introductory psychology course. In a sense, we can't tell whether a student's expectations on this measure reflect his stereotype of an introductory psychology course, his recollection of classrooms where he has done particularly well or a kind of autistic wish-fulfillment. Certainly it would not be difficult to have the student fill out the form twice, once in terms of "success in the course" and again in terms of "how likely is this to occur in this course?" As suggested above, it would certainly be possible to leave room for the subject to suggest characteristics not included which he thinks important.

With such a self-rating instrument, there are a number of different directions in which the study of expectations might go. It would be interesting to see if there are changes in the student's judgment of importance (i.e., changes in expectation) over the course of the semester and whether or not these changes are related to performance or other dependent variables. Certainly the posttest measure would be meaningful if the student was asked not only whether the characteristics were present or absent, but how important they were after a semester's experience.

Our speculations about the results also lead us to think that not only may there be other ways to get at student expectations, but also that such an analysis should be supplemented in a number of ways. First, general indices pertaining to involvement, comfort and enjoyment of the course would be invaluable, particularly because they might help us assess whether or not an individual is operating at his optimal level of performance. We know that there are certain concomitants of over or under-arousal (e.g., boredom vs. anxiety and defensiveness) and this would be a more direct test of that hypothesis.

Second, one would like a way to get at the individual's most salient academic and interpersonal concerns, and the way he typically handles these. We would be particularly interested in the extent to which characteristics of the classroom situation elicit approach and avoidance motivations. For this we might move to less structured techniques, be they incomplete sentences or TAT pictures. For instance, one might present a series of pictures which depict a student in various kinds of classrooms, e.g., students in a circle around a table, teacher at the board and all the students taking notes, students in small groups and conferring. The subject would be asked to write a story about the student's feelings, thoughts and future behavior and the stories would be scored for dominant themes, and principal characteristics to which the subject attended. Such devices might be used to build a new, more extensive check-list. The semantic differential also seems a potentially useful instrument here, especially administered several times and at the end of the semester. Students might be asked to rate "Classroom I can work best in", "classroom I expect this to be", "teacher I can work best with", "teacher I expect" and so on. Another valuable instrument would be Mann's Interpersonal Outcome Inventory.

Finally, some measure of self-esteem might enlarge our perspective and should prove quite promising especially in relation to the effect of frustration of expectation . Again, the evaluative scales on the semantic differential might be useful.

Although this study focuses on student expections, it seems appropriate to begin thinking about the assessment of teacher expectations of students. Many of the techniques described here might be adapted for studying teachers' expectations of student behavior and of their own behavior. For instance, one might ask teachers, especially those who have not taught before, how they expect to behave in certain critical situations, e.g., where a group of students is disrupting the class or where a student is hostile. If this were to pick up the teacher's image of what he should do in such situations, it would be exciting (if possible) to capture his real behavior in such typical situations and see what the effects of "frustration of expectation for the self" might be.

On balance, the study of expectation, I feel, holds great promise, not only for what it reveals about the effects of expectations, but also for what it may reveal about many other dimensions of student (and teacher) behavior. Needless to add, I hope that my expectations will not be frustrated.

Atkinson, J. W. Motives in Fantasy, Action, and Society. New York: Van Nostrand, 1966.

Berlyne, D. Conflict, Arousal and Curiosity. New York: McGraw-Hill, 1960.

Biddle, J. and Thomas, E. J. Role Theory: Concepts and Research. New York: Wiley, 1966.

Bruner, J. S. On perceptual readiness. Psychological Review, 1957, 64, 123-152.

Bruner, J. S. and Postman, L. On the perception of incongruity: a paradigm. Journal of Personality, 1949, 18, 206-233.

Deutsch, M., Kraus, R. and Rosenau, N. Dissonance or defensiveness? Journal of Personality, 1961, 30, 16-28.

Festinger, L. A Theory of Cognitive Dissonance. New York: Harper and Row, 1957.

Goldstein, A. P. Therapist-Patient Expectations in Psychotherapy. New York: Pergamon Press, 1962.

Goode, W. J. A theory of role-strain. American Sociological Review, 1960, 25, 483-496.

Heider, F. The Psychology of Interpersonal Relations. New York: Wiley,1958.

Henle, M. Some effects of motivational processes on cognition. Psychological Review, 1955, 62, 423-432.

Levinson, D. J. Role, personality and social structure in the organizational setting. In N. Smelser and W. Smelser (eds.) Personality and Social Systems. New York: Wiley, 1961.

Lynd, H. On Shame and the Search for Identity. New York: Science Editions, 1958.

McKeachie, W. J. Motivation, teaching methods, and college learning. in M. R. Jones (Ed.), Nebraska Symposium on Motivation, V. 9. Lincoln: University of Nebraska Press, 1961.

Newcomb, T. The Acquaintance Process. New York: Holt, Rinehart and Winston, 1961.

Osgood, C. E. and Tannenbaum, P. H. The principle of congruity in the prediction of attitude change. Psychological Review, 1955, 12, 42-55.

Rosenthal, C. R. On the social psychology of the psychological experiment: the experimenter's hypothesis as unintended determinant of experimental results. American Science, 1963, 51, 268-283.

Rotter, J. B. The role of the psychological situation in determining the direction of human behavior. in M. R. Jones (Ed.) Nebraska Symposium on Motivation, V. 3. Lincoln: University of Nebraska Press, 1955.

Secord, P. and Backman, C. W. Social Psychology. New York: McGraw-Hill, 1964.

Seigal, S. Non-parametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.

Tolman, E. C. Cognitive maps in rats and men. Psychological Review, 1948, 55, 189-208.

Veroff, J. and Shipley, T. A projective measure of the need for affiliation in J. W. Atkinson (Ed.) Motives in Fantasy, Action, and Society. New York: Van Nostrand, 1958.

Zajonc, R. B. Balance, congruity and dissonance. Public Opinion Quarterly, 1960, 24, 280-296.

Zimbardo, P. and Formica, R. Emotional comparison and self-esteem as determinants of affiliation. Journal of Personality, 1963, 31, 141-162.

Journal of Consulting and Clinical Psychology
1968, Vol. 32, No. 1, 26–29

STUDENT ACHIEVEMENT MOTIVES, ACHIEVEMENT CUES, AND ACADEMIC ACHIEVEMENT[1]

W. J. McKEACHIE, ROBERT L. ISAACSON, JOHN E. MILHOLLAND,
AND YI-GUANG LIN

University of Michigan

3 studies of the relationship between scores on the TAT measure of need for achievement and course grades produced no consistent results. The interaction between need for achievement and a measure of achievement cues in the class also failed to be related to grades. Factors influencing the prediction of grades from scores on the achievement motive are discussed.

When McClelland, Atkinson, Clark, and Lowell (1953) named their book and their measure of motivation "the achievement motive" they instigated one of the most frustrating yet tantalizing chases after a will-o'-the-wisp in the history of psychology. Obviously, a measure of achievement motivation should predict achievement, and what index of achievement lies closer at hand than academic grades? Investigators hoped that here at last was a measure that would enable them to account for the considerable variance in college grades that was unrelated to intellectual measures.

McClelland et al. (1953, pp. 237–242) published results of studies at Wesleyan and Trinity in which correlations of .51 ($N = 30$), .05 ($N = 40$), and .32 ($N = 19$) were found between college grades and need for achievement. Krumboltz (1957) concluded his review with the statement that the TAT measure of the achievement motive (n Ach) has almost no validity for predicting college grades. Klinger (1966), too, pointed out the more frequent occurrence of significant relationships between n Ach and performance with younger subjects than with college subjects.

How can this seeming gap in construct validity be reconciled with other evidence supporting the validity of the measure? One plausible explanation is that academic achievement is overdetermined (Atkinson, 1958, pp. 287, 601–603). Because academic achievement may lead to satisfaction of needs for understanding, power, or affiliation, among others, it is unlikely to be predicted well by a measure of just one motive. Atkinson's argument would thus predict low correlations, but presumably they should still be positive.

Both n Ach theory and research suggest, as another possible explanation, that individuals high in n Ach work hard only when cues to achievement are present. It was this explanation that we wished to test.

In our studies of effective teaching, one of our hypotheses was that men[2] high in achievement motivation would perform best in classes where the instructor set high achievement standards, encouraged competition, and where students perceived the work to be challenging. On the other hand, we hypothesized that men in the middle range of n Ach scores, characterized by fear of failure, would do poorly in such sections. No prediction was made for students in the lowest third of the n Ach score distribution.

PROCEDURE

To test our hypotheses we needed a sample of students differing in motivation and a sample of instructors differing in the cues emitted. We were primarily concerned with the relative achievements of students within a given class. There are clear advantages of generalization, however, if conclusions can be based upon more than one course. Consequently, in our first experiment we chose three multisection courses representing quite different types of content and objectives. The second-year French and freshman mathematics courses met four times a week, the psychology course three times a week. Section sizes were typically 20–30. Thirty-one instructors participated, all of whom had had previous teaching experience. Except for four instructors in French, all instructors were men. Some 80% of the 825 students in these courses gave us usable data. Results of this study were reported by McKeachie (1961).

---

[1] The earlier data reported in this study were collected under a grant from the Fund for Advancement of Education. The more recent data were collected and analyzed with support from the United States Office of Education Research Contracts OE No. 850 and SAE-8451 to W. J. McKeachie, J. E. Milholland, and R. L. Isaacson. John W. Atkinson and Joel Raynor gave helpful comments on an earlier draft of this paper.

[2] Sex differences play an important role in the studies of achievement motive. Almost all successful studies have used men as subjects; attempts to use the measure with women have had only spotty success. In the present studies, therefore, the data for men and women were treated separately, and more success with men was anticipated.

The second and third studies were attempts to replicate our earlier findings. In the second study the 16 instructors were individually responsible for two sections of introductory psychology with up to 30 students in each. Each section met four times a week. Enrolled in the course were 406 women and 348 men, and about 90% of these students participated in our study.

In a third study in two introductory psychology courses, 266 men and 244 women students gave us usable n Ach scores and received grades, out of a potential sample of the 953 students of 24 teachers.

The measure of motivation was the TAT-type measure of McClelland et al. (1953). The pictures used were those described by Veroff, Atkinson, Feld, and Gurin (1960). Tests were administered under neutral conditions to groups of 30–100 students, either before the beginning of the semester or during the first weeks of the semester. Scoring was done by scorers using the method described by Atkinson (1958). Their correlations with an expert scorer ranged .82–.90. A recheck at the end of scoring yielded correlations (Spearman rho) ranging .81–1.00 for a 30-story sample.

Scores in the upper third of our distribution were taken as indicative of positive motivation for achievement. Scores in the middle third of the distribution were taken as indicative of fear of failure (Moulton, 1958). Mean scores for men in the three studies were 4.92, 5.28, 4.13, with standard deviations about 4.0. Mean scores for women were 5.48, 6.12, and 4.75. These scores are higher than those reported for the national sample, as would be expected for a college-student sample.

The measure of teacher achievement cues in the first study was the mean rating by a teacher's students on the following items, which were included on a 12-item scale described by McKeachie (1961) and given at the end of the semester:

> Instructor set very high standards for the students.
> Members of the class competed to do well.
> The course work presented a real challenge to me.

In our second and third studies we used the following single item from the 46-item scale described by Isaacson, McKeachie, Milholland, Lin, Hofeller, Baerwaldt, and Zinn (1964):

> He maintained definite standards of student performance.

Two types of outcome measures were used. Course grades were used in all courses, and achievement tests were given to the psychology students. In the first study, psychology students had as part of their final examination 15 multiple-choice items and 1 essay question. All essay tests were scored blind by a single experienced instructor who was not involved in the experiment. The second study used the same 15-item objective test and the Criteria Test of Psychological Thinking (Milholland, 1964) as part of the final course examination. The third study used the Criteria test, a 25-item multiple-choice test of knowledge, and an essay test given in one of the two introductory courses.

RESULTS

Little relationship between n Ach scores and grades was found. A summary of the data on this question from all three studies is given in Table 1. Although the high n Ach students tend to achieve better grades than those lower in n Ach, the relationship was nonsignificant.

TABLE 1

RELATION BETWEEN N ACH SCORES AND COURSE GRADES

n Ach score	Grade			
	Men[a]		Women[b]	
	A, B	C, D, E	A, B	C, D, E
High	114	103	197	161
Medium	81	101	150	154
Low	144	163	136	158
Total	339	367	483	473

Note.—Correlation between n Ach and total score on the American Council on Education Psychological Examination was .03 for men and −.07 for women.

[a] $\chi^2 = 2.8, df = 2, ns.$

[b] $\chi^2 = 5.2, df = 2, p = .10.$

The data directly bearing on the hypothesis have been extracted and presented in Table 2. The trends supporting our hypothesis are unimpressive.

Three post hoc hypotheses seemed worth checking. One was that students with low n Ach scores would need extrinsic sources of motivation and, hence, would perform better in high-achievement-cue sections. This hypothesis was not supported.

TABLE 2

COURSE GRADES OF MEN WITH HIGH- AND MIDDLE-RANGE N ACH SCORES IN HIGH-ACHIEVEMENT-CUE SECTIONS

Course	n Ach score	Percentage A's and B's	
		Hi-Ach-Cue sections	Lo-Ach-Cue sections
French	High	0(5)	75(4)
	Middle	0(4)	no cases
Mathematics	High	23(13)	77(9)
	Middle	33(12)	67(9)
Psychology			
First study	High	14(7)	14(7)
	Middle	33(6)	86(7)
Second study	High	52(27)	48(27)
	Middle	48(27)	37(19)
Third study	High	71(24)	62(24)
	Middle	40(20)	52(21)
All courses combined	High	46(76)	58(71)
	Middle	39(69)	54(56)

Note.—Total *N* indicated in parentheses.

The second hypothesis was that there was a pervasive achievement-cue effect. Results indicated some positive effect of high cues upon performance. In 1963 students taught by teachers who "maintained definite standards of student performance" made significantly higher scores on both an essay test and on objective test of knowledge, but not on the Criteria Test of Psychological Thinking.

The third hypothesis was that as the number of achievement cues increase, more and more other motives for achievement are also invoked—both positive and negative; thus n Ach is likely to be important only under relatively low cue conditions. Although trends in this direction occurred, the differences between high and low n Ach in low cue sections were not significant.

DISCUSSION

Why did we get negative results? One possibility is that we used the wrong pictures. The Veroff et al. (1960) TAT is relatively lower in cues for n Ach than some sets of pictures used in other studies. With relatively few achievement-related responses, reliability of measurement is likely to be reduced (Haber & Alpert, 1958). Nevertheless, our scores are comparable to those reported in successful experiments.

A second possibility is that our testing conditions interacted with subject characteristics to further reduce reliability of measurement. As Atkinson (1958, p. 607) has pointed out, the cues to achievement of a college classroom may not be the same for all college students.

But even if measurement were reliable, we would encounter theoretical complications. In recent years Atkinson and his students have turned more and more from the use of n Ach as a single independent variable to a more complex formulation involving motive for success (M_s—represented by the n Ach score), motive to avoid failure (M_{AF}—usually measured by a test-anxiety questionnaire), and probability of success. One should expect n Ach to predict grades when probability of success is about .5 and when the resultant motivation is to seek success rather than avoid failure. We had thought that we could get at probability indirectly through our measure of ability and estimates of the difficulty of the course. Presumably, students in the middle range of ability in a course of moderate difficulty should produce maximum motivation, but this does not take account of the differences in goals of students differing in ability. A student of high ability may set a grade of A as his goal, while another student sets a goal of B or C. We did not obtain the expected interactions between ability, n Ach, anxiety, and achievement and, unfortunately, did not collect individual measures of probability of success.

The course-difficulty estimates did give us some food for thought. Psychology is perceived as a course of moderate difficulty, while French is perceived as easier and mathematics is thought to be more difficult. Although interaction in psychology was not statistically significant, the students high in n Ach did tend to do well in sections high in achievement cues. In mathematics and French, however, the students high in n Ach did relatively better in classes low in achievement cues, a result explainable if one assumes that the presence of definite standards (our achievement-cues item) makes clearer the low or high probability of success, thus lowering the motivation of the student high in n Ach.

Atkinson and O'Connor (1966) have found evidence that the relationship between total motivation and performance is curvilinear. Thus, adding high achievement motivation to other strong motives for getting good grades may in fact result in a decrement in performance. Hence, perhaps n Ach may predict grades only in classes with relatively low cues to other motives. We thus analyzed the interaction of n Ach in sections varying in achievement, affiliation, and power cues and found no consistent results. Even with complicated curvilinear post hoc hypotheses about the effect of the combined motives and of achievement, affiliation, and power and of ability on performance, we found nothing exciting that could be replicated.

In short, the refinements we introduced into our experimental design were not sufficient to bring forth a significant positive relationship between achievement motivation and academic achievement. We introduced one new variable: level of achievement cues. Scores on the items we used to measure achievement cues seem to have only a small relation to overall achievement, which may mean either that our items are poor or that there are so many achievement cues in college courses that differences between classes are not important. We must conclude that this variable's interaction with n Ach, if any, is not sufficiently vigorous to produce any substantial positive effect on course grades. Our justification for publishing this study is simply that the typical prospective researcher on academic performance may be unaware of the difficulty of predicting college grades from the TAT measure of n Ach. One might conclude from this that n Ach is not a useful variable in research in higher education, but this is not so. Isaacson (1964) has shown that n Ach *does* help predict curricular choice, but it does not seem to be the answer to the persisting problem of grade prediction.

REFERENCES

Atkinson, J. W. (Ed.) *Motives in fantasy, action, and society.* Princeton, N. J.: Van Nostrand, 1958.

Atkinson, J. W., & O'Connor, P. Neglected factors in studies of achievement-oriented performance: Social approval as an incentive and performance decrement. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation.* New York: Wiley, 1966. Pp. 299–326.

Haber, R. N., & Alpert, R. The role of situation and picture cues in projective measurement of the achievement motive. In J. W. Atkinson (Ed.), *Motives in fantasy, action and society.* Princeton, N. J.: Van Nostrand, 1958. Pp. 644–663.

Isaacson, R. L. Relation between n Achievement, test anxiety and curricular choices. *Journal of Abnormal and Social Psychology,* 1964, **68,** 447–452.

Isaacson, R. L., McKeachie, W. J., Milholland, J. E., Lin, Y. G., Hofeller, M., Baerwaldt, J. W., & Zinn, K. L. The dimensions of student evaluations of teaching. *Journal of Educational Psychology,* 1964, **55,** 344–351.

Klinger, E. Fantasy need achievement as a motivational construct. *Psychological Bulletin,* 1966, **66,** 291–308.

Krumboltz, J. D. Measuring achievement motivation: A review. *Journal of Consulting Psychology,* 1957, **4,** 191–199.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. *The achievement motive.* New York: Appleton-Century-Crofts, 1953.

McKeachie, W. J. Motivation, teaching methods, and college learning. In M. R. Jones (Ed.), *Nebraska symposium on motivation: 1961.* Lincoln: University of Nebraska Press, 1961.

Milholland, J. E. Measuring cognitive abilities. In W. J. McKeachie, R. L. Isaacson, & J. E. Milholland (Eds.), *Research on the characteristics of effective college teaching.* Ann Arbor: University of Michigan Press, 1964.

Moulton, R. W. Notes for a projective measure of fear of failure. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society.* Princeton, N. J.: Van Nostrand, 1958. Pp. 563–571.

Veroff, J., Atkinson, J. W., Feld, S., & Gurin, G. The use of thematic apperception to assess motivation in a nationwide interview study. *Psychological Monographs,* 1960, **74**(2, Whole No. 499).

(Received April 26, 1967)

Journal of Personality and Social Psychology
1966, Vol. 4, No. 4, 457–461

II - 7: STUDENT AFFILIATION MOTIVES, TEACHER WARMTH, AND ACADEMIC ACHIEVEMENT[1]

W. J. McKEACHIE, YI-GUANG LIN,
JOHN MILHOLLAND, AND ROBERT ISAACSON
University of Michigan

The hypothesis that affiliation cues would interact with n Affiliation in determining achievement in a college class was tested in introductory courses in mathematics and psychology. In 3 separate studies, men high in n Affiliation made relatively better grades in classes characterized by a high level of affiliation cues, whereas low n Affiliation men did relatively better in classes low in affiliation cues. Results for women were not consistent.

In natural settings many variables may influence the behavior being studied by the researcher. He must hope that the variables he is studying are potent enough to show through a great deal of noise generated by the many uncontrolled variables in the situation he studies. When a finding reaching an acceptable level of statistical significance emerges, it is usually published and may become an accepted part of the literature. When attempts are made to replicate such findings, they often fail.

Our research strategy has been a conservative one in the sense that we have generally not published our first significant results, but instead have tried to replicate them. On the other hand we are not conservative in interpreting the results of our replications. In the studies to be reported in this article, we argue that results obtained in the same direction as our original statistically significant findings should strengthen one's confidence in the hypothesized relationship even though they do not reach conventional levels of statistical significance.

This is one of a series of studies at the University of Michigan concerned with interactions between student motives and cues from instructors that affect achievement in college classes. The theoretical context has been previously described:

Students enter college with a number of important, relatively stable motives learned at home, in their previous educational experiences, and through other experiences. There are not only individual differences in these motives, but also differences in the relative strength of different motives within individuals. Students also possess skills and abilities useful in achieving goals in college. Some of these, such as verbal ability, are measured by the intelligence tests given for admission; others, like note-taking skill, study habits, ability to gain the instructor's sympathy, and ability to make friends, are not measured in our entrance battery.

Unfortunately for the sort of research described in this paper, there is a motivational factor of major importance common to all classes and student—grades. Because most students are highly motivated for grades, the differential effects of differing teaching methods in eliciting such motives as need for achievement, need for affiliation, and need for power are more difficult to detect. Nevertheless, if everyone were motivated equally, the correlation between abil-

---

[1] The earlier data reported in this study were collected under a grant from the Fund for Advancement of Education. The later data were collected and analyzed with support from the United States Office of Education, Research Contracts SAE-8541 and 4/10-001 to W. J. McKeachie, J. E. Milholland, and Robert L. Isaacson.

ity measures and grades should be much higher than usually found. Even the best combinations of measures of ability leave over half the variance in grades unaccounted for—enough at least to leave hope that motivational measures may contribute significantly (McKeachie, 1961, pp. 114–115).

Let us assume that the affiliation motive is a dimension of individual differences among college students. Classes differ in the extent to which they provide cues for this motive. Some instructors are warm, friendly, and personally interested in each student; others are subject- or self-oriented and elicit few expectations of affiliative satisfactions. This assumption leads to the hypothesis:

TABLE 1

INTERACTION OF AFFILIATION CUES, AFFILIATION MOTIVE, AND GRADES

Classroom affiliation cues	Student n Affiliation	Psychology students' grades[a]		
		A + B	C + D	Total
High	High	30	18	48
	Low	17	31	48
Low	High	17	27	44
	Low	24	20	44
Total		88	96	184

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Grade (C)	8.5**
A × B	.0
A × C	.8
B × C	.1

Classroom affiliation cues	Student n Affiliation	Male mathematics and psychology students' grades[b]		
		A + B	C + D	Total
High	High	25	21	46
	Low	10	21	31
Low	High	17	33	50
	Low	16	17	33
Total		68	92	160

Variables	χ^2
A × B × C	5.2*
A × B	.00
A × C	.15
B × C	.53

Note.—Although results for each of the three groups (Math men, Psych men, and Psych women) were in the predicted direction, none reached the 5% level of significance by itself.

[a] Excerpted from a larger analysis including three other variables: Sex, Instrumentality, and Intelligence.

[b] Excerpted from a larger analysis including the variables: Intelligence, Instrumentality, and Course.

* $p < .05$, $df = 1$.

** $p < .01$, $df = 1$.

TABLE 2

INTERACTION OF AFFILIATION CUES, AFFLIATION MOTIVE, AND GRADES: SECOND STUDY

Classroom affiliation cues	Student n Affiliation[a]	Men		
		Course grades		
		A + B	C, D, E	Total
High	High	36	21	57
	Middle	22	27	49
	Low	20	25	45
Low	High	26	33	59
	Middle	21	25	46
	Low	31	25	56
Total		156	156	312

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Grades (C)	5.47*
A × B	1.03
A × C	1.14
B × C	.32

[a] In the second and third studies *N*s were sufficiently large to permit breaking n Affiliation into thirds.

* $p < .10$, $df = 2$.

The grades of students high in affiliation motivation will be relatively higher in classes high in affiliative cues than in classes with few affiliative cues, while the grades of students lower in affiliation motivation will be relatively lower in classes high in affiliative cues than in classes with few affiliative cues.

The gap in this theory is that even when a student wants to win affiliative satisfaction from a teacher, it is not certain that he will perceive academic achievement as being instrumental to such satisfactions. He might perceive "apple-polishing," asking questions, or other behaviors as instrumental responses having a greater probability of leading to affiliative satisfaction. These instrumentalities were not investigated in our studies.

PROCEDURES

Sample

For the first study we chose three multisection courses representing quite different types of content and objectives. They were second-year French, freshman mathematics, and general psychology. Thirty-one instructors participated—all of the experienced teachers in these courses. Since results for women were generally inconclusive, as is common for studies using the Thematic Apperception Test (TAT), and since the French course had few men, it is not included in this report.

Within these courses all students were invited to take a group of tests designed to measure our independent variables. Of the 555 students in the two courses, 533 provided usable responses on some tests. However, incomplete responses on particular tests lead to varying *N*s in the tables included herein.

In the second study 16 introductory psychology teachers participated. There were 406 women and 348 men enrolled in the introductory course. Not all teachers gave all measures so that *N* varied from 510 to 737. In the third study 24 teachers with 466 men and 487 women students enrolled in introductory psychology courses participated.

Measures

The TAT method developed by Shipley and Veroff (1952) was used to measure student need for affiliation. The pictures were those used in the national study of motivation by Veroff, Atkinson, Feld, and Gurin (1960). Tests were administered under neutral classroom conditions to 30–100 students in a group. The reliability of our trained scorers, as measured by correlations with experts, ranged from .82 to .89.

TABLE 3

INTERACTION OF AFFILIATION CUES, AFFILIATION MOTIVES, AND GRADES: THIRD STUDY

Classroom affiliation cues	Student n Affiliation	Men		
		Course grades		
		A + B	C, D, E	Total
High	High	26	21	47
	Middle	34	31	65
	Low	21	14	35
Low	High	16	17	33
	Middle	16	16	32
	Low	26	17	43
Total		139	116	255

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Grade (C)	.41
A × B	8.74**
A × C	1.51
B × C	.50

Note.—The following interaction is irrelevant to our hypothesis. It only indicates that mid n Affiliation subjects tended more than low n Affiliation subjects to be in the classes of high-warmth teachers. Individual differences in n Affiliation did not correlate with ratings of teacher warmth, so that this seems less likely to be a rating artifact than chance or a real difference in classroom climate created when a high proportion of students are similar in n Affiliation.

** $p < .02$, $df = 2$.

TABLE 4

INTERACTION OF AFFILIATION CUES, AFFILIATION MOTIVE, AND PERFORMANCE ON TEST OF KNOWLEDGE: SECOND STUDY

Classroom affiliation cues	Student n Affiliation	Men		
		Knowledge test		
		High	Low	Total
High	High	26	13	39
	Middle	13	22	35
	Low	10	15	25
Low	High	19	19	38
	Middle	25	12	37
	Low	26	16	42
Total		119	97	216

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Knowledge (C)	9.65**
A × B	2.90
A × C	.56
B × C	2.32

** $p < .01$, $df = 2$.

Affiliation Cues

In the first study each student completed a 12-item questionnaire about characteristics of the classroom. This questionnaire contained the three items with the highest factor loadings on each of four factors emerging from a factor analysis of a longer questionnaire. The four factors had to do with achievement cues, friendliness, organization of the content of the course, and organization of testing and grading.

The items for affiliation cues (friendliness) were as follows:

> The instructor takes a personal interest in students.
> Students in the class were friendly.
> The instructor calls students by name.

Students rated their class on each item on a scale from 1 "always present" to 4 "never present." The scores on the three items were summed, and the mean rating for each class was used as the index of the level of affiliation cues in that class.

In the second study, classroom observers rated the overall level of affiliation cues. In the third study student ratings were again used.

Outcome Measures

Two types of outcome measures were used. Course grades were used in all courses, and achievement tests were given to the psychology students. In the first study psychology students had as part of their final examination 15 multiple-choice items and one essay question. All essay tests were scored blind by a single experienced instructor who was not involved in the experiment. The second study used the same 15-item objective test and the "Criteria Test" (Milholland, 1964) as part of the final course examination. The third study used the Criteria Test, a 25-item multiple-choice test of knowledge, and an essay test given in one of the two introductory courses.

RESULTS AND DISCUSSION

The experimental hypothesis was supported in the first study by a significant interaction in the expected direction among affiliation cues, motivation, and grades for all students in psychology and for men in mathematics and psychology taken together (see Table 1). Positive results were also obtained for men in the second and third studies (see Tables 2 and 3). There was a tendency for high n Affiliation women in the second and third studies to perform as predicted, but the grades for low n Affiliation women were contrary to the hypothesis.

Note that in neither the second nor the third study did the results reach the .05 level of significance. But none of these three studies was carried out in an exploratory "see-what-comes-out" fashion. We undertook them to look for just such an interaction, and the fact that it emerged three times, albeit at close to chance levels, is more convincing to us than a single .05 level result emerging from a welter of analyses. The interaction of warmth and n Affiliation accounts for very little of the variance in course grades, but it does have a ***replicable*** effect.

TABLE 5

INTERACTION OF AFFILIATION CUES, AFFILIATION MOTIVE, AND PERFORMANCE ON CRITERIA TEST: SECOND STUDY

Classroom affiliation cues	Student n Affiliation	Men		
		Criteria test		
		High	Low	Total
High	High	30	19	49
	Middle	16	26	42
	Low	20	17	37
Low	High	21	30	51
	Middle	21	21	42
	Low	25	26	51
Total		133	139	272

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Criteria Test (C)	4.90*
A × B	1.33
A × C	1.14
B × C	.69

* $p < .10$, $df = 2$.

TABLE 6

INTERACTION OF AFFILIATION CUES, AFFILIATION MOTIVE, AND PERFORMANCE ON ESSAY TEST: THIRD STUDY

Classroom affiliation cues	Student n Affiliation	Men		
		Essay test		
		High	Low	Total
High	High	16	13	29
	Middle	27	18	45
	Low	9	13	22
Low	High	10	16	26
	Middle	10	12	22
	Low	11	17	28
Total		83	89	172[a]

Variables	χ^2
n Affiliation (A) × Affiliation Cues (B) × Essay (C)	.43
A × B	6.54*
A × C	2.69
B × C	3.04

[a] The *N* in Table 6 differs from that in Table 3 because the essay test was used in only one of the two introductory psychology courses.

* $p < .05$, $df = 2$.

The results thus lend some support to our hypothesis. But did the high grades of high n Affiliation students in high-warmth sections result from high levels of achievement or simply from the student's ability to make a good impression on the instructor?

Although no achievement-test scores were available in mathematics, we have one check upon this in the scores on the common portions of the final examinations in the psychology courses. The pattern of results on the objective tests used in the first and third studies revealed no interaction. On the tests used in the second study, high n Affiliation men tended to do well in high affiliation cue sections (see Tables 4 and 5), and a similar trend was found on the essay test used in the third study (see Table 6). These data suggest that the interaction of warmth and n Affiliation affected actual achievement and not just grades.

Why did men high in n Affiliation achieve better grades for friendly teachers? Our guess would be that these students saw academic achievement as a means of gaining approval and personal interest of the teacher. But this guess should be checked, and we anticipate questioning such students about their perceptions of avenues to affiliative satisfactions.

What does this study contribute? We see its major contribution as a demonstration that the effects of interactions between situational and individual difference variables can be revealed in studies in natural settings, and that even with relatively imprecise measures such interactions are powerful enough and stable enough to emerge in replicated studies.

But we see a second contribution in the content itself. Psychologists often talk in the abstract about the interaction of cue and motive, but seldom have much to say about what situational variables interact with what motives. We have added in a small way to the evidence that n Affiliation not only should, but really does affect behavior in real life, and that its elicitation in the classroom depends upon the teacher's friendliness.

The results reported here may be related to those of studies of public school teachers by Cogan (1958) and by Ryans (1960), which indicate that a dimension characterized by friendly, integrative, affiliative, nurturant, behavior is also important in public school teaching. Teachers high on this dimension produced more student self-initiated work than teachers low on it. Although teacher warmth appears to be an important dimension of teaching, our results indicate that its effect is not uniform. The "warm" teacher (high affiliation cues) is not always effective. His effectiveness depends upon characteristics of his students.

REFERENCES

COGAN, M. L. The behavior of teachers and the productive behavior of their pupils: II. Trait analysis. *Journal of Experimental Education,* 1958, 27, 107–124.

MCKEACHIE, W. J. Motivation, teaching methods, and college learning. In M. R. Jones (Ed.), *Nebraska symposium on motivation: 1961.* Lincoln: University of Nebraska Press, 1961. Pp. 111–146.

MILHOLLAND, J. E. Measuring cognitive abilities. In W. McKeachie, R. Isaacson, & J. Milholland, *Research in characteristics of effective college teaching.* Ann Arbor: University of Michigan, 1964.

RYANS, D. G. *Characteristics of teachers.* Washington, D. C.: American Council on Education, 1960.

SHIPLEY, T. E., & VEROFF, J. A. A projective measure of need affiliation. *Journal of Experimental Psychology,* 1952, 43, 349–356.

VEROFF, J., ATKINSON, J. W., FELD, S. C., & GURIN, G. The use of thematic apperception to assess motivation in a nationwide interview study. *Psychological Monographs,* 1960, 74(12, Whole No. 499).

(Received October 15, 1965)

II-8 The Interaction of Achievement Cues and Facilitating Anxiety in the Achievement of Women

W.J. McKeachie

Alpert and Haber (1960) developed a test of anxiety about acheivement tests with two subtests...one for debilitating anxiety, the other for facilitating anxiety. They presented evidence that the facilitating anxiety scale correlated positively with grade point average while the debilitating anxiety scale correlated negatively with GPA.

In our use of the Alpert and Haber test at the University of Michigan we have not found that it consistently contributes much beyond standard college aptitude measures to the prediction of grades in our introductory psychology course. We have found, however, that the scores on the scale consistently interact with a measure of achievement cues emitted by the instructor in predicting the grades of women. (Not for men.) The sample and procedures used in these studies are described in McKeachie et al (1966). (Chap. II-7 of this report).

Table 1 indicates this interaction for three different samples. In each sample women students high in facilitating anxiety did relatively well in classes low in achievement cues while students low in facilitating anxiety did relatively poorly in these classes.

Table 1

The Interaction of Achievement Cues, Facilitating Anxiety and Grades of Women

			Grades		
	Facil. Anx.	Ach. Cues	A & B	C,D,E	N
1963 Sample					
	Hi	Hi	27	25	52
		Lo	40	27	67
	Lo	Hi	37	23	60
		Lo	20	38	58
			124	113	237
1961 Sample					
	Hi	Hi	55	47	102
		Lo	54	42	96
	Lo	Hi	35	40	75
		Lo	40	65	105
			184	194	378
1958 Sample*					
	Hi	Hi	50	36	85
		Lo	72	49	121
	Lo	Hi	40	43	83
		Lo	41	49	90
			203	177	380

Interaction chi square for combined data = 5.59 with 1 degree of freedom PL.02

*The 1958 sample is described in McKeachie, the 1961 and 1963 samples are students in elementary psychology courses.

Discussion

What accounts for this rather consistent finding?

First, let us look at the specific measures of achievement cues and facilitating anxiety. In the two later studies the index of achievement cues was obtained by computing the mean rating students assigned an instructor on the following item:

"He maintained definite standards of student performance."

In the first study we used the mean of three items:

"Instructor set very high standards for student"
"Members of the class competed to do well"
"The course work presented a real challenge to me"

A typical item on the Facilitating Anxiety Scale is "I work most effectively under pressure--as when the task is very important." We had expected students high in facilitating anxiety (who answer such questions affirmatively) to do well in classes with high achievement cues, but these results in the opposite direction suggest that the Facilitating Anxiety Scale may be a test of general academic motivation as much as a scale of test anxiety. In short, women who score high on this scale may say they are unafraid of tests because they study and are prepared to the limits of their ability. Students who score low on the scale may simply be unmotivated. When the instructor provides additional cues to achievementthe unmotivated students begin to work. Since grades are more or less relative within a class, the unmotivated students win relatively more of the high grades in the situation where they are encouraged to work. This suggestion is supported by the finding that on the Introductory Psychology Criteria Test (Milholland 1964) and on a test of knowledge administered as part of the final examination, women high in facilitating anxiety did about equally as well whether taught in high or low achievement cue sections, but the low facilitating anxiety women more nearly approached the achievement of the high FA women when in high cue sections.

Summary

Women psychology students low in Facilitating Anxiety as measured by the Alpert-Haber AAT achieved better grades when taught by teachers characterized by expectations of high standards of achievement than when taught by teachers with less high expectations while women high in Facilitating Anxiety achieved relatively better grades in classes characterized by lower standards of achievement.

References

Alpert, R.and Haber, R.N. Anxiety in academic achievement situations. Journal of abnormal and social psychology, 1960, 61, 207-215.

McKeachie, W.J., Lin, Y.G., Milholland, J. & Isaacson, R. Student affiliation motives, teacher warmth, and academic achievement. Journal of Personality and Social Psychology. 1966, 4, 457-461.

Milholland, J. E., Measuring cognitive abilties. In McKeachie, W.J., Isaacson, R.L. and Milholland, J.E. *Research on the Characteristics of Effective College Teaching, Final Report: Cooperative Research Project No. OE 850, U.S. Office of Education and The University of Michigan*. Ann Arbor: Department of Psychology, The University of Michigan, 1964.

II-9; Interactions Between Student Anxiety and Teacher Produced Anxiety Cues

Robert Stakenas and John E. Milholland

Introduction

In attempting to explain the lack of significant differences between differing teaching methods and student performance, McKeachie has theorized that students who profit from one method may be adversely affected by a different approach, while other students may be affected in just the opposite way. Thus, when group comparisons are made, gains are nullified by losses so that there seems to be little over-all difference in group performance. By examining relationships between personality characteristics of students and teachers, McKeachie was able to find significant interactions between variables such as students' need affiliation and teacher warmth in determining course grade (McKeachie, 1961).

In view of McKeachie's findings, it would be profitable to determine what other factors in the college classroom are subject to similar interactions. A likely prospect would be anxiety since its effect on learning and performance has been demonstrated in many studies (Atkinson, 1960; Child, 1954; I.G. Sarason, 1960).

Instructions intended to manipulate levels of arousal have also been shown to interact with anxiety and performance. For example, Mandler and Sarason (1952) found that an intervening report produced differential effects on performance of a block assembly task. Subjects who had been identified as high-anxious on an anxiety questionnaire performed more effectively when no evaluative reference was made to their previous performance; both success and failure reports tended to reduce the level of performance for these high-anxious subjects. The performance of the low-anxiety group, however, improved after evaluative references. Irwin Sarason (1957) reported an interaction among anxiety, motivating instructions, and a serial verbal learning task. In another study, Montague (1953) compared high and low anxiety groups in ability to learn lists of nonsense syllables which differed in association value and intralist similarity. A significant interaction was obtained, with low-anxious subjects being superior to high-anxious on the more complex task; but on the least difficult task, high anxious subjects were superior to low anxious subjects. Sarason and Palola (1960) studied the combined effects of task difficulty, instructions, anxiety, and performance. They also found significant interactions, the results suggesting that high difficulty and highly motivating instructions combined to lower performance for high-anxious subjects. On the basis of their findings they concluded that attempts to relate anxiety to either instructional or difficulty variables alone would not be as fruitful as analyzing the three variables simultaneously.

At this point it seems clear that anxiety arousal can have differential effects on learning and performance. The nature of this effect depends upon the interaction of perceived threat, task complexity, and anxiety disposition of the individual. But what is the mechanism presumed to be operating within the person that facilitates or disrupts his performance under stressful conditions? Mandler and Sarason (1952) have advanced a habit interpretation of anxiety which assumes that individuals learn to emit different kinds of responses to anxiety arousing stimuli. Anxiety itself is considered to be a response-produced stimulus with functional characteristics of a drive (Miller and Dollard, 1950). Anxiety reactions become generalized from previous experiences. The anxiety drive is assumed to elicit responses that tend to reduce the drive. These responses can be of two different types. One type includes responses which are not specifically connected with the nature of the task, such as feelings of inadequacy, helplessness, anticipation of punishment, loss of self esteem, or implicit attempts to leave the psychological field. Such responses could be designated as self- rather than task oriented. The second general type of responses to anxiety arousal are directly related to the completion of the task and reduce anxiety by leading to task completion. Thus, under conditions of stress persons with a predisposition toward emission of self-oriented responses would find their task performance disrupted because of response competition. The generalized self-oriented responses, whose aim is to reduce the anxiety drive, would compete with responses necessary to perform the required task. When response competition is strong, the level of performance is reduced. On the other hand, persons who react more realistically to the situation would find their performance facilitated under conditions of arousal, because of the absence of competing responses and the presence of responses directed toward the goal.

On the basis of this habit interpretation of anxiety, Alpert and Haber (1960) constructed two test anxiety scales, one to assess facilitating anxiety, the other, interfering or debilitating anxiety. Using these new scales they found a positive relationship between facilitating anxiety and college grade point average and the reverse for debilitating anxiety. Although the correlations were higher than those obtained using a general measure of anxiety, such as Taylor's Manifest Anxiety Scale, the specific test anxiety scales were correlated with ability, whereas the general anxiety measures were not. Nevertheless, Alpert and Haber found that their anxiety scales made a significant addition to ability measures in the prediction of grades by a multiple regression equation.

Since the teacher is highly involved with motivating and evaluating student performance, his behavior could be an important cue for anxiety arousal in academic situations. In view of the fact that anxiety arousal has differential effects on learning and performance, it would seem reasonable to expect that the teacher's behavior, as a potential anxiety cue, could be an important source of variance in academic performance. In order to test this notion several interactional hypotheses were generated for empirical testing. Assuming that the Alpert-Haber facilitating and debilitating anxiety scales are measures of differential response tendencies to anxiety arousal, it was predicted that, other things being equal:

H 1: Students high in facilitating anxiety will tend to do relatively better in classrooms with more teacher-produced anxiety cues, but students low in facilitating anxiety will tend to do relatively better in classrooms with fewer anxiety cues.

H_2: The relationships for debilitating anxiety will be the reverse of those for facilitating anxiety.

The two hypotheses above are attempts to predict performance purely on the basis of anxiety disposition and anxiety arousal. Task difficulty also needs to be carefully considered, however.

Assuming that course requirements are of intermediate difficulty, college students with high ability should find task demands relatively easy. According to results obtained by Sarason and Palola (1960), high anxious subjects perform better than low anxious subject on an easy task whether situational conditions are neutral or highly motivating. Therefore, it was predicted that:

H_3: High ability-high debilitating anxiety students will achieve higher grades than high ability-low debilitating anxiety students, irrespective of the level of teacher-produced anxiety cues.

Sarason and Palola also found that performance level on a difficult task was decreased for highly anxious subjects under highly motivating conditions. Since course work would be relatively more difficult for college students with relatively low ability, it was predicted that:

H_4: Low ability-high debilitating anxiety students will achieve higher grades under low teacher anxiety cues, but low ability-low debilitating anxiety students will achieve higher grades under high teacher anxiety cues.

Are conditions during the course of an academic year actually similar to the conditions in the experimental laboratory? In the studies cited, the situation was relatively novel and length of time to adapt brief so that the interaction of anxiety disposition and anxiety arousal emerges quite clearly. During the course of a semester, however, students have lengthy periods of time in which to adapt to anxiety aroused in the classroom. A more thorough formulation of this problem would require considering not only the frequency of anxiety cues but also the student's behavior after he experiences them. Thus, students with good study habits would be better able to handle anxiety related to academic achievement situations through more thorough mastery of subject matter and completion of assignments. Once material is sufficiently learned, performance would be less affected by aroused states during recall since anxiety seems to have more deleterious effects on response acquisition than on the performance of an already existing response (Bindra, 1959). Therefore, it was predicted that:

H_5: Disparity of performance of students who are alike in having high debilitating anxiety but who differ in study habits, will be greater in high anxiety cue classes than in low anxiety cue classes with performance of good study habit students being superior.

In order to assess the effect of anxiety in the academic testing situation the Introductory Psychology Criteria Test was given as part of the final examination. Although the test is based on content in the introductory course, items were designed with the intention of measuring application of cognitive skills beyond retention of factual material. Since anxiety level of most students is raised during final examinations, it was assumed that the test would be administered under stressful conditions. Thus, administration of the Criteria Test would seem to be comparable to situations encountered in the experimental studies reviewed. The predictions were:

H_6: Other things being equal, students with high facilitating anxiety will achieve higher Criteria Test scores than students with low facilitating anxiety.

H_7: The relationships for debilitating anxiety will be the reverse of those for facilitating anxiety.

Procedure

The first sample consisted of students and teachers in all 37 sections of the introductory psychology course at the University of Michigan during the spring semester of 1961. These sections were taught by 15 male and 1 female graduate student teaching fellows. Seven hundred fifty-one students were enrolled, but 127 were omitted from the sample because of incomplete data. The 1961 data analyzed herein are based on the remaining sample of 364 female and 260 male students.

Another sample was obtained for replication. This second sample included students and teachers in 34 out of 41 sections of the introductory psychology course at the University during the spring semester of 1963. These sections were taught by 6 female and 19 male instructors, 6 of whom were Ph.D's. Although 825 students were enrolled, the size of this sample was also reduced because of incomplete data. Results reported for 1963 are based on 243 female and 174 male students.

Intellectual ability was assessed in 1961 by means of the American Council on Education Psychological Examination (ACE) and in 1963 by the College Entrance Examination Board Scholastic Aptitude Test (SAT), facilitating anxiety (FA) and debilitating anxiety (DA) by the Alpert-Haber scales, and study habits (SH) by The Work.[1] The ACE and SAT had been administered prior to election of the course while assessment of FA, DA, and SH was completed early in the semester.

Anxiety cue indices were derived from two items on a student rating form given at the end of the semester. These items were:

> He continually emphasized grades.
>
> By the way he acted, he made students feel afraid of him.

Each item was rated on a 5-point Likert-type scale. The mean item score for a class was used as the measure of anxiety cues in that class. Anxiety cue means could thus range from 1.00 to 5.00, 1.00 indicating a high cue level. Outcome measures were course grades and scores on the Introductory Psychology Criteria Test.

Results

Implicit in the development of the experimental design and hypotheses was the assumption that there would be sufficient variability in anxiety cues, from class to class, to permit a clear assessment of their effect. This did not prove to be the case, as may be seen in Table I.

Table I

Mean Anxiety Cue Ratings, 1961 and 1963

Rating	Score range	Number of sections 1961	1963
Almost always occurred	1.00-1.49	0	0
Often occurred	1.50-2.49	0	0
Occasionally occurred	2.50-3.49	0	1
Seldom occurred	3.50-4.49	30	24
Almost never occurred	4.50-5.00	7	9
Total		37	34

---

[1] The Work is a 20 item adaptation of the Brown-Holtzman Survey of Study Habits and Attitudes used by permission of the copyright holders for this research project only. The original instrument was copyrighted in 1953 by the Psychological Corporation, New York, N.Y. All rights reserved.

In all but one of the 71 sections mean ratings were beyond the neutral point and indicated a low level of anxiety cues in the classroom. This may be highly desirable from a human relations point of view but obviously limits our ability to test the hypotheses proposed.

A further complication was introduced by the existence of correlations among the independent variables, as shown in Tables 2 and 3. This made it necessary to control for three independent variables when testing for the interaction of a fourth with anxiety cues, as the experimental hypotheses called for.

Table 2

Intercorrelations of Measures for 241 Men and 302 Women
Students in Introductory Psychology, Spring semester, 1961

		Study Habits	Debilitating Anxiety	Facilitating Anxiety	Course Grade	Criteria Test
ACE Test	Men	.029	-.321**	.195**	.378**	.476**
	Women	-.038	-.263**	.198**	.339**	.476**
Study Habits	Men		-.218**	.245**	.271**	.10
	Women		-.127*	.126*	.140*	-.03
Debilitating Anxiety	Men			-.496**	-.181**	-.12*
	Women			-.531**	-.211**	-.22**
Facilitating Anxiety	Men				.249**	.06
	Women				.215**	.24**
Course Grade	Men					.50**
	Women					.50**

* p< .05 ** p <.01

a. Correlations between ACE and Criteria Test, and Grade and Criteria Test are for both sexes combined (N=676). Complete data for all other correlations were available for only 241 males and 302 females.

Table 3

Intercorrelations of Measures for 218 Men and 279 Women
Students in Introductory Psychology, Spring semester 1963

		Study Habits	Debilitating Anxiety	Facilitating Anxiety	Course Grade	Criteria (a) Test
SAT	Men	.001	-.245**	.330**	.36**	.58**
	Women	.013	-.234**	.282**	.41**	.55**
Study Habits	Men		-.297**	.221**	.10	.01
	Women		-.192**	.163*	.16*	.00
Debilitating Anxiety	Men			-.426**	-.2 **	-.22**
	Women			-.402**	-.10	-.19**
Facilitating Anxiety	Men				.18**	.28**
	Women				.14*	.15*
Course Grade	Men					.57**
	Women					.53**

* p <.05   ** p <.01

a. Correlations between Grade and Criteria Test were based on 180 men and 219 women.

The lack of precision in our measures and inequality of cell frequencies, as well as the fact that we were interested only in rather substantial interactions, seemed to point toward a simple design rather than toward an elaborate covariance analysis. Therefore, it was decided to divide the distribution of ability measures into thirds and to dichotomize the distributions of all other independent variables at the median. The master contingency tables would thus contain 48 cells for each outcome measure: 3 (Ability) X 2 (Study Habits) X 2 (Debilitating Anxiety) X 2 (Facilitating Anxiety) X 2 (Anxiety Cues). Because of the narrow range of anxiety cues, only students in sections falling in the upper 25% and lower 25% of the anxiety cue distribution were used for testing. Thus, for the 1961 sample only the nine highest and seven lowest rated sections were used; in the 1963 sample it was the thirteen highest and nine lowest. Separate analyses were made for men and women and these results are shown in Tables A-D in the Appendix.

The hypotheses were tested by the sign test with the cell as the unit. That is, the number of cells supporting and opposing the prediction formed the basis for the test. The results appear in Table 4. The last column of this table is based

Table 4

Summary of Results

Hypothesis No.	Interacting Variables	Ratio of Agreements to Disagreements				Direction of Result and Probability *				Aggregate	
		Men		Women		Men		Women		Ratio	Direction and Probability
		1961	1963	1961	1963	1961	1963	1961	1963		
	I Grade as Criterion										
1.	Facilitating Anxiety; Anxiety Cues	5/7	9/3	8/10	13/5	neg. .39	pos. .07	neg. .41	pos. .05	35/25	
2.	Debilitating Anxiety; Anxiety Cues	3/9	8/4	6/12	9/9	neg. .07	pos. .19	neg. .12	ND .59	26/34	
3.	High Ability; Debilitating Anxiety	0/3	1/3	1/5	1/6	neg. .12	neg. .31	neg. .11	neg. .06	3/17	neg. .001
4.	Low ability: Debilitating Anxiety; Anxiety Cues	3/3	1/3	2/3	2/3	ND .66	neg. .31	neg. .50	neg. .50	8/12	neg. .25
5.	High Debilitating Anxiety: Study Habits; Anxiety Cues	2/1	1/3	2/1	2/4	pos. .50	neg. .31	pos. .50	neg. .34	7/9	
	II Criteria Test as Criterion										
6.	Facilitating Anxiety	9/5	5/5	9/11	6/13	pos. .21	ND .62	neg. .41	neg. .08	29/34	
7.	Debilitating Anxiety	8/5	8/3	11/7	13/7	pos. .29	pos. .11	pos. .24	pos. .13	40/22	pos. .02

---

* pos indicates that the observed effect was in the predicted direction;

(footnote continued on page II - 9 - 9)

on the combined data from all four samples in those instances when at least three of the separate results were in the same direction.

Discussion

The results are not consistent with the anxiety arousal model on which the experimental hypotheses were based. For example, in Hypothesis 1 it was predicted that students high in facilitating anxiety would do better under high teacher produced anxiety cues. Although failing to reach significance, effects observed in 1961 were opposite to the direction anticipated. The predicted effect did occur in 1963, however, with significance levels of .07 for the men and .05 for the women. The expected relation between facilitating anxiety and Criteria test score, as formulated in Hypothesis 6, was not found in either year, the results being weak and inconsistent.

The predicted interaction of debilitating anxiety, anxiety cue, and grade was likewise inconsistent and non-significant. Furthermore, the trend in the data was that the presence of anxiety cues apparently enhanced, rather than reduced, the level of achievement of students high in DA, contrary to the effect anticipated in Hypothesis 2. The interaction between level of course difficulty in relation to ability and anxiety, as stated in Hypothesis 3, was also contradicted by the data with sufficient vigor to reach statistical significance (p of the aggregate = .001). In this instance high ability students with low DA achieved higher grades than students with high ability and high DA. Apparently course work is sufficiently difficult so that even bright students with high DA are unable to achieve as well as their compeers with low DA. Further analysis of the data, including anxiety cues as well as DA, failed to reveal any systematic effects.

The effect of teacher produced anxiety cues on the academic performance of low ability students with high DA was surprising. It was assumed that course requirements would be more difficult for low ability students. Therefore, anxiety arousal should act to reduce the level of academic performance as predicted in Hypothesis 4. Although the results failed to reach significance, low ability, high DA students tended to achieve higher grades under high teacher anxiety cues (p of the aggregate = .25). This was contrary to our expectation, based on Sarason

---

* neg indicates that the observed effect was opposite to the direction predicted; ND indicates that no decision could be reached concerning direction of the observed effect because the observed event fell in the middle category of the binomial distribution. Since each hypothesis was tested on the same subjects for a given year, the different tests within a column are not independent. All probabilities are one-tailed, based on the sign test, for frequencies equal to or greater than the larger obtained frequency, regardless of whether it was in the positive or negative direction.

and Palola's 1960 report.

In Hypothesis 5, it was predicted that differences in level of achievement between students alike in high DA, but differing in study habits, would be greater under high anxiety cues. The observed effects were opposite to initial expectancy, as differences in performance were somewhat less under high anxiety cue conditions.

It is noteworthy that the results for DA, anxiety cue, and course grade were opposite to the direction hypothesized, yet effects for DA and Criteria test were as expected. These contrasting results suggest that there may be subtle differences in response to anxiety cues depending on the nature of the task and length of time available for adapting to the situation. Results for DA and Criteria test performance during the final examination are in agreement with results reported in the laboratory studies: low DA students tended to achieve higher test scores than students high in DA (p of the aggregate = .02). The data for Hypothesis 2, however, indicate that high DA students achieve higher grades in classes taught by instructors rated as emitting more anxiety cues (e.g., emphasizing grades). Given adequate time to adapt, high DA students thus seem to respond to evaluative threats by increased efforts to achieve. On the other hand, during the relatively brief period of time during the final examination, with all its attendant stress, performance for high DA students seems to be uniformly disrupted. This latter effect is consistent with the competing response interpretation offered by Mandler and Sarason.

In light of the inconsistent results and restricted range of anxiety cues, these data are interpreted as failing to confirm the stated hypotheses. Although the results fail to support any strong generalizations, some implications should be noted. For example, if effects observed are due to psychological phenomena and not chance variation, then it appears that highly anxious students, in terms of debilitating anxiety, are more sensitive to interactions since most consistent effects were noted for them in contrast to students measured on the facilitating anxiety dimension. Thus, even with the limited range of anxiety cues it may be that instructors are seen as emitting cues with encourage or discourage task relevant activities and consequently affect the academic performance of highly anxious students.

Since the effect of anxiety arousal on cognitive functioning has been demonstrated in the laboratory, why do interactions between student anxiety disposition and instructor anxiety cues remain so elusive? One important factor which may have some bearing on this question is the length of time available for the subjects to adjust to the situation. In the experimental studies cited, the situation was relatively novel and length of time to adapt brief so that the interaction of anxiety disposition and anxiety arousal emerges quite clearly. In an academic setting students have prolonged periods of time (days, often weeks and months) in which to prepare and to familiarize themselves with unexpected or novel elements such as new subject matter areas, idiosyncrascies of the instructor, etc. We know that anxiety arousal motivates behavior in a somewhat predictable manner during brief periods of performance. Can we assume that similar effects will obtain over longer periods of time, also? In academic performance it is the behavior after anxiety arousal, e.g., studying vs not studying, that eventually determines the level of learning and not just the fact that arousal has taken place. One material becomes well learned it is less likely to be confused or forgotten even under conditions of stress.

Since rehearsal of subject matter is highly important in academic performance, other things being equal, it appears that future studies should attempt to control for this factor more carefully in order to be able to distinguish between differences in performance. More specifically, it would be important to know if performance was low because of decrements due to anxiety arousal or because of poor mastery of the subject matter. Another important motivational factor that should be taken into consideration is course or grade instrumentality.[2] How important is the subject matter or the course grade to the student's immediate and future goals?

As an initial effort in examining interactions between student anxiety dispositions and teacher anxiety cues, this study fails to supply us with any hard and fast conclusions. The failure of theoretical expectations to be realized may be a result of the small amount of variability among teachers in the emission of anxiety cues. On the other hand, the fact that there was a significant effect of debilitating anxiety on Criteria Test scores but not on course grades suggests that the time available to deal with anxiety may be a crucial factor that will have to be considered in future research on this problem.

---

[2] Personal communication from Dr. Robert Isaacson

References

Alpert, R. and Haber, R.N. Anxiety in academic achievement situations. *Journal of Abnormal and Social Psychology*. 1960, 61 207-215.

Atkinson, J.W. Personality dynamics. *Annual Review of Psychology*. 1960, 11, 255-281.

Bindra, Dalbir, *Motivation: A Systematic Reinterpretation*. New York: Ronald Press, 1959, 210-257.

Child, I.L. Personality. *Annual Review of Psychology*. 1954, 5, 149-170.

Dollard, John and Miller, Neal E., *Personality and Psychotherapy*. New York: McGraw-Hill, 1950, 62-94.

Mandler, G. and Sarason, S.B. A study of anxiety and learning. *Journal of Abnormal and Social Psychology*. 1952, 47, 166-173.

McKeachie, W.J. Motivation, teaching methods, and college learning. *Nebraska Symposium on Motivation*. Lincoln: University of Nebraska Press, 1961.

Montague, E.K. The role of anxiety in serial rote learning. *Journal of Experimental Psychology*. 1953, 45, 91-95.

Sarason, I.G. Effect of anxiety and two kinds of motivating instructions on verbal learning. *Journal of Abnormal and Social Psychology*. 1957, 54, 166-171.

Sarason, I.G. Empirical findings and theoretical problems in the use of anxiety scales. *Psychological Bulletin*. 1960, 57, 403-415.

Sarason, Irwin, and Palola, Ernest. The relationship of test and general anxiety, difficulty of task, and experimental instructions to performance. *Journal of Experimental Psychology*, 1960, 59, 185-191.

Sarason, S.B., Mandler, G., and Craighill, P.C. The effect of differential instructions on anxiety and learning. *Journal of Abnormal and Social Psychology*., 1952, 47, 561-565.

Yerkes, R.M., and Dodson, J.D. The relations of strength of stimulus to rapidity of habit formation (1908) in J.S. Brown. *The Motivation of Behavior*. New York: McGraw-Hill, 1961, 57-96.

APPENDIX

Table A: Men, 1961

ACE	SH	DA	FA	Anx Cue	N	Grade	N	Criteria Test	Cell
HI	H		H	H	3	3.00	2	10.50	1
				L	1	4.00	1	11.00	2
			L	H	0	.00	0	.00	3
				L	1	4.00	1	12.00	4
			H	H	5	3.20	5	9.20	5
				L	2	4.00	2	11.50	6
			L	H	1	4.00	1	10.00	7
				L	1	4.00	1	12.00	8
	L		H	H	2	3.00	2	9.50	9
				L	0	.00	0	.00	10
			L	H	0	.00	0	.00	11
				L	3	1.67	2	10.00	12
			H	H	10	2.70	10	10.90	13
				L	0	.00	0	.00	14
			L	H	3	3.00	3	10.33	15
				L	2	3.50	2	11.00	16
MID	H		H	H	1	3.00	1	10.00	17
				L	2	3.00	2	10.00	18
			L	H	0	.00	0	.00	19
				L	3	1.67	3	9.67	20
			H	H	4	2.25	4	10.00	21
				L	6	2.67	6	10.17	22
			L	H	1	2.00	1	7.00	23
				L	0	.00	0	.00	24
	L		H	H	2	2.50	2	9.50	25
				L	3	1.67	3	8.00	26
			L	H	3	2.67	3	8.33	27
				L	2	2.00	2	9.00	28
			H	H	2	3.00	2	11.00	29
				L	4	3.00	4	10.00	30
			L	H	0	.00	0	.00	31
				L	0	.00	0	.00	32
LOW	H		H	H	2	3.00	2	10.00	33
				L	4	2.50	4	9.25	34
			L	H	4	2.50	4	7.75	35
				L	1	2.00	1	11.00	36
			H	H	1	4.00	1	7.00	37
				L	5	2.60	5	9.80	38
			L	H	0	.00	0	.00	39
				L	2	2.00	2	8.00	40
	L		H	H	2	2.00	2	9.00	41
				L	1	4.00	1	12.00	42
			L	H	6	1.83	6	8.83	43
				L	4	2.00	4	8.00	44
			H	H	1	1.00	1	1.00	45
				L	1	2.00	1	10.00	46
			L	H	0	.00	0	.00	47
				L	1	2.00	1	9.00	48
					N=102		N=100		

Table B: Women, 1961

ACE	SH	DA	FA	Anx Cue	N	Grade	N	Criteria Test	Cell
HI	H	H	H	H	4	3.00	4	10.00	1
				L	1	3.00	1	11.00	2
			L	H	3	3.00	3	10.67	3
				L	1	2.00	1	9.00	4
		L	H	H	1	3.00	1	12.00	5
				L	6	2.83	6	8.00	6
			L	H	2	3.00	2	10.50	7
				L	1	3.00	1	9.00	8
	L	H	H	H	1	2.00	1	8.00	9
				L	1	2.00	1	7.00	10
			L	H	4	2.00	4	9.50	11
				L	2	2.50	2	9.50	12
		L	H	H	8	2.63	8	10.25	13
				L	8	3.13	8	11.00	14
			L	H	2	3.50	2	11.00	15
				L	2	3.00	2	9.50	16
MID	H	H	H	H	1	2.00	1	8.00	17
				L	1	3.00	1	10.00	18
			L	H	3	3.00	3	9.67	19
				L	2	2.50	2	8.50	20
		L	H	H	5	2.80	5	9.60	21
				L	6	3.00	6	10.33	22
			L	H	5	2.40	5	9.00	23
				L	1	3.00	1	11.00	24
	L	H	H	H	3	2.33	2	9.50	25
				L	1	3.00	1	10.00	26
			L	H	5	2.00	5	10.00	27
				L	2	1.50	2	8.00	28
		L	H	H	3	2.00	3	7.00	29
				L	5	2.60	5	10.20	30
			L	H	3	2.33	3	9.67	31
				L	2	3.00	2	8.00	32
LOW	H	H	H	H	2	2.50	2	9.00	33
				L	1	2.00	1	4.00	34
			L	H	5	2.60	5	7.60	35
				L	2	2.00	2	8.00	36
		L	H	H	7	2.43	7	8.43	37
				L	4	2.25	4	8.00	38
			L	H	5	1.80	5	7.20	39
				L	0	.00	0	.00	40
	L	H	H	H	6	2.17	6	8.67	41
				L	1	2.00	1	8.00	42
			L	H	9	1.78	9	8.00	43
				L	0	.00	0	.00	44
		L	H	H	1	3.00	1	9.00	45
				L	3	1.67	3	10.00	46
			L	H	0	.00	0	.00	47
				L	0	.00	0	.00	48
					N=141		N=140		

Table C: Men, 1963

SAT	SH	DA	FA	Anx Cue	N	Grade	N	Criteria Test	Cell
HI	H	H	H	H	0	.00	0	.00	1
				L	1	2.00	1	13.00	2
			L	H	1	2.00	1	12.00	3
				L	1	3.00	1	11.00	4
		L	H	H	5	3.60	5	10.40	5
				L	2	3.50	2	13.00	6
			L	H	1	4.00	1	13.00	7
				L	0	.00	0	.00	8
	L	H	H	H	4	3.00	4	11.00	9
				L	0	.00	0	.00	10
			L	H	2	2.50	2	11.00	11
				L	1	3.00	1	10.00	12
		L	H	H	5	3.60	5	11.40	13
				L	2	3.50	2	11.50	14
			L	H	5	2.40	5	8.80	15
				L	0	.00	0	.00	16
MID	H	H	H	H	2	2.50	2	7.00	17
				L	2	3.00	2	9.50	18
			L	H	2	3.50	2	7.00	19
				L	1	4.00	1	13.00	20
		L	H	H	5	3.20	5	10.80	21
				L	3	3.00	3	10.33	22
			L	H	2	3.00	2	6.50	23
				L	0	.00	0	.00	24
	L	H	H	H	4	2.25	4	9.75	25
				L	1	2.00	1	10.00	26
			L	H	5	3.00	5	8.60	27
				L	1	3.00	1	10.00	28
		L	H	H	1	3.00	1	10.00	29
				L	0	.00	0	.00	30
			L	H	0	.00	0	.00	31
				L	4	3.00	4	11.00	32
LOW	H	H	H	H	0	.00	0	.00	33
				L	1	1.00	1	4.00	34
			L	H	4	2.75	4	9.00	35
				L	3	2.33	3	6.67	36
		L	H	H	3	3.00	3	8.67	37
				L	3	2.00	3	5.33	38
			L	H	1	1.00	1	9.00	39
				L	0	.00	0	.00	40
	L	H	H	H	0	.00	0	.00	41
				L	0	.00	0	.00	42
			L	H	10	2.30	10	8.00	43
				L	4	2.00	4	6.75	44
		L	H	H	1	2.00	1	9.00	45
				L	1	2.00	1	6.00	46
			L	H	1	2.00	1	6.00	47
				L	2	2.50	2	9.00	48
					N=97		N=97		

Table D: Women, 1963

SAT	SH	DA	FA	Anx Cue	N	Grade	N	Criteria Test	Cell
HI	H	H	H	H	4	2.50	4	10.00	1
				L	2	4.00	2	11.50	2
			L	H	2	3.00	2	11.00	3
				L	2	3.00	2	11.50	4
		L	H	H	8	3.38	8	9.63	5
				L	3	3.67	3	11.00	6
			L	H	1	3.00	1	12.00	7
				L	1	4.00	1	5.00	8
	L	H	H	H	5	2.60	5	9.00	9
				L	2	1.50	2	10.50	10
			L	H	3	2.67	3	10.33	11
				L	4	2.50	4	9.00	12
		L	H	H	5	2.80	5	9.80	13
				L	7	2.43	7	10.71	14
			L	H	3	3.00	3	11.33	15
				L	2	3.00	2	12.00	16
MID	H	H	H	H	4	3.25	4	9.50	17
				L	2	3.50	2	11.00	18
			L	H	7	2.57	7	9.29	19
				L	1	3.00	1	12.00	20
		L	H	H	8	2.25	8	8.88	21
				L	6	2.17	6	9.50	22
			L	H	3	2.33	3	9.67	23
				L	3	2.67	3	7.67	24
	L	H	H	H	2	3.00	2	10.50	25
				L	1	2.00	1	8.00	26
			L	H	4	2.50	4	9.25	27
				L	3	2.67	3	9.67	28
		L	H	H	5	2.40	5	8.40	29
				L	4	2.00	4	9.00	30
			L	H	3	3.00	3	10.33	31
				L	0	.00	0	.00	32
LOW	H	H	H	H	3	3.33	3	7.00	33
				L	1	.00	1	3.00	34
			L	H	7	2.43	7	7.29	35
				L	8	2.13	8	6.63	36
		L	H	H	7	2.57	7	8.00	37
				L	1	2.00	1	7.00	38
			L	H	6	2.50	6	8.00	39
				L	5	2.80	5	8.80	40
	L	H	H	H	1	2.00	1	7.00	41
				L	3	1.67	3	5.67	42
			L	H	12	2.25	12	6.92	43
				L	5	2.40	5	6.60	44
		L	H	H	2	1.50	2	7.50	45
				L	0	.00	0	.00	46
			L	H	0	.00	0	.00	47
				L	0	.00	0	.00	48
					N=171		N=171		

II-10: Student Characteristics Related to Achievement in Elementary French, Mathematics and Psychology Courses

Yi-Guang Lin and Wilbert J. McKeachie

In recent years, there have been many studies of the relationship between the so-called "non-intellectual" student characteristics and academic performance. For example, Frick (1955), and Frick and Keener (1956) used several scales of the Minnesota Multiphasic Personality Inventory (MMPI) in addition to an intelligence test for predicting freshman grade point average. They found that predictive efficiency was increased by inclusion of Hypochondriasis, Depression, Psychopathic deviate, Paranoia, Schizophrenia, and Hypomania scales. Holland (1960) in his study of National Merit Scholarship students, used Cattel's Sixteen Personality Factor Questionnaire (16PF) to provide possible non-intellectual predictors of first year college grades. His results suggested that "persistence" (as measured by Cattell's Conscientiousness scale, Factor g) could be a useful predictor. Fricke's Achiever Personality scale (Ach P) has been found to be significantly correlated with freshmen grade point average (Fricke, 1963) independently of intelligence.

Gough (1953) developed an honor point ratio scale for his California Personality Inventory (CPI), (Gough, 1957). He found that his Hr scale predicted both high school and college grades. The mean correlation of Hr scale with intellectual ability score was found to be .26 while the mean correlation with academic achievement was .38. Bendig and Klugh (1956) found that Gough's Hr scale could predict psychology course grades and total undergraduate honor point ratio equally well. Gough (1964) reported that his Achievement via Independence (Ai) scale correlated significantly with course grades in introductory psychology and that the regression equations consisting of six CPI scales: Social presence (Sp), Self control (Sc), Achievement via Conformance (Ac), Achievement via Independence (Ai), Intellectual efficiency (Ie), and Psychological mindedness (Py) for men students, and of six scales of Sociability (Sy), Responsibility (Re), Good impression (Gi), Communality (Cm), Achievement via Independence (Ai), and Psychological mindedness (Py) for women students produced multiple correlations of .41 and .37 for each sex sample with the psychology course grade. In a cross validation study, when College Vocabulary Test (CVT) was included in the regression equation only three scales: Good impression (Gi), Achievement via Independence (Ai) and Flexibility (Fx) scales contributed significantly beyond what the intellectual ability did for the prediction. (The multiple correlation increased from .42 to .47). His results indicated that the Ai scale was the most significant CPI scale predicting the performance in an introductory psychology course.

Four CPI scales: the Socialization (So) scale, Responsibility (Re), Achievement via Conformance (Ac), and Achievement via Independence (Ai), especially the So scale were found to differentiate achievement among intellectually gifted persons (Gough, 1955, 1963). Gough considered the dimension of Socialization to asocialization to be a basic factor responsible for the differential achievement among gifted persons. Gough believes that, for the students of average ability, achievement motivation as measured by the Ac and Ai scales, is of greater importance. "Specifically, with respect to measures on the CPI, the Ai and Ac scales are highly significant forecasters of scholastic achievement for unselected samples or for students of average ability, for samples of intellectually gifted students Ac and Ai fall in predictive value while So rises in importance." (Gough and Fink, 1964).

Test anxiety has been found by a number of researchers to relate to academic performance (Alpert and Haber, 1960; Reese, 1961; Ruebush, 1960; Sarason, I., 1957, 1959, 1961; Sarason and Mandler, 1952). Alpert and Haber suggest that anxiety may have either a facilitating or interfering effect on performance, depending on whether the individual's response to anxiety is constructive or disruptive.

These studies suggest that the utilization of some non-intellectual student characteristics along with an intellectual ability measure might substantially increase the predictability of performance in introductory courses at the college level. It may be that successful students in the introductory courses are those students who have high intellectual ability, good study habits and skills, low debilitating anxiety in a test situation, and high scores on Gough's Achievement via Independence (Ai) scale and on Fricke's Achiever Personality (Ach P) scale. These variables are of course correlated, so that a person high on one is likely to be high on others. Nevertheless, several different non-intellectual characteristics apparently do contribute to successful performance in introductory courses.

The present investigation is an attempt to evaluate the relative merit of intellectual and non-intellectual tests in predicting performance. It consists of two studies. The problem of the first study was the relation of CPI scores to achievement in three different courses: elementary French, Mathematics and Psychology. In the second study, two samples of psychology students were used in order to test the stability of relationships obtained in the first study.

The First Study

Problem

French, Mathematics and Psychology represent three different types of subject matters and perhaps require somewhat different abilities. If so, different patterns of predictor variables might forecast achievement in them. In addition, on the assumption that the students in the elementary French and introductory psychology courses were less highly selected than the students in the Mathematics course, it might be expected that the So scale would be more closely related to performance in Mathematics than the Ai and Ac scales, whereas the reverse would be true for French and psychology courses. Also, because a considerable amount of rote learning is required to learn French, we would expect a higher correlation for Achievement via Conformance (Ac) scale in the French course than in the others.

The problem of this first study, then, was to test these expectations of differential efficacy of the three CPI scales in predicting grades in French, mathematics and psychology.

Method

Subjects

The subjects were students enrolled in a second year French course, an elementary mathematics course and an introductory psychology course at the University of Michigan in the Spring semester of 1958. Only those students from whom CPI scores were obtained were included in this study: 214 students out of a total of 292 enrolled in the French course, 194 out of 292 in the mathematics course and 229 out of 241 in the psychology course.

Measures of Student Characteristics

In addition to the CPI, two anxiety tests were administered to these subjects. Taylor's Manifest Anxiety Scale (MAS) (Taylor, 1953) was used to assess general anxiety. Alpert and Haber's Achievement Anxiety Test (AAT) (Alpert and Haber, 1960) yielded two scores: one for debilitating anxiety (DA) and one for facilitating anxiety (FA). Intellectual ability was assessed by the 1949 edition of the American Council on Education Psychological Examination (ACE).

The final course grade was used as a measure of student performance. Correlation coefficients between student characteristics and the course grade were computed and two regression analyses using the course grade as a dependent variable were performed. Because the primary concern was the relationship between the CPI variables and student performance, the first analysis was done with the CPI variables only. To evaluate the degree of predictability added by CPI, the second analysis included both the CPI variables and the ACE and anxiety variables.

Results

None of the CPI scales correlated significantly at the .05 level with the course grade for the French students. For the mathematics course, the Socialization (So) and Responsibility (Re) scale correlated significantly with the course grade for both men and women. The other significant correlations in mathematics occurred only for the Achievement via Conformance (Ac) scale in the male group and the Sociability (Sy) scale in the female group.

For the Psychology male group, two measures of achievement motivation-Achievement via Conformance (Ac) and Achievement via Independence (Ai) - correlated significantly with the course grade. For the women, the Sense of Well-being scale (Wb) correlated significantly negatively with the course grade. These results support our hypotheses that So scale would be more highly related to performance in the mathematics course and Ai and Ac scales more strongly related to performance in the psychology course.

Although in three of the four groups the predictive value of the CPI scales is rather low they could be useful if they provide information in addition to that supplied by other available measures. Data on this point are found in Tables 1 and 2 presenting the results of the regression analysis, which included intellectual and anxiety variables. For men in the French course no score made a significant addition to the predictive validity of the ACE score (r = .424). Both ACE (r = .282) and Debilitating Anxiety (r = -.249) could be useful for women in French, but the multiple correlation of .324 was below the single variable correlation for the men.

In the case of men in mathematics, the CPI Socialization scale (r= .276) combined with ACE (r = .265) to yield a multiple R of .379.

Discussion

The results thus confirmed the hypothesis that different variables were related to performance in the different courses. For French, no CPI scales were found to be significantly correlated with the course grade. For mathematics, the Socialization scale was found to be a useful predictor variable, in accordance with the rationale discussed earlier. Holland (1959) also found that So scale was more efficient than other CPI scales in predicting college grades in his National Merit Scholarship sample.

The results of the present study also tended to support Gough's finding and that of Rosenberg, et al. (1962) on the utility of the Ai scale.

The Second Study

In the second study, several new measures of student characteristics were used. The same measures, with one exception, were applied to two different samples in the same course in order to study the replicability of the effect.

Method

Subjects

The subjects were students in introductory psychology courses at the University of Michigan in the Spring semesters of 1961 and 1963. The results reported here were based only on those students who had scores on all measures used. There were 486 usable cases out of the total 750 enrolled in the 1961 sample, and 497 cases out of 825 in the 1963 sample.

Measures of Student Characteristics

In the 1961 sample, intellectual ability was measured by scores on the 1949 edition of the American Council on Education Psychological Examination (ACE). In the 1963 sample, the College Entrance Examination Board Scholastic Aptitude Test (SAT) was used.

Table 1

Correlation Coefficients Between California Psychological Inventory, Intellectual Ability, Anxiety and Grades in Three Courses.

Measures	French Course		Mathematics Course		Psychology Course	
	Men	Women	Men	Women	Men	Women
Dominance	-.037	-.108	.097	.049	-.031	.015
Capacity for Status	-.165	.065	.048	-.252*	.141	.015
Sociability	-.024	.002	-.023	-.337**	-.014	-.034
Social Presence	-.005	-.023	.039	-.239	-.089	-.100
Self-acceptance	-.068	-.009	-.045	-.154	.080	-.084
Sense of Well-being	.044	.118	.109	-.050	.073	-.176*
Responsibility	-.044	.159	.274**	.271	.171	.074
Socialization	.136	.121	.276**	.391**	.118	.100
Self-control	.021	.076	.133	.147	.059	-.027
Tolerance	-.128	.084	.181	.060	.143	-.062
Good Impression	-.078	.102	.052	-.077	.085	.003
Communality	.174	.034	-.049	.099	.022	-.112
Achievement via Conformance	-.059	.158	.207*	.116	.202	.026
Achievement via Independence	-.027	.127	.026	.042	.373**	.100
Intellectual Efficiency	.041	.093	.115	.001	.262*	.001
Psychological Mindedness	-.070	.070	.194	.235	.114	.131
Flexibility	-.150	-.044	-.062	-.212	.194	.049
Femininity	-.204	.016	.057	.190	.132	.006
ACE	.424**	.282**	.265**	.256*	.264*	.348**
Debilitating Anxiety	-.397	-.249**	-.255**	-.208	-.342*	-.114
Facilitating Anxiety	.227	.231*	.156	.256*	.248*	.213*
Taylor Manifest Anxiety	-.109	-.002	-.077	.085	-.031	.031
N	45	145	113	62	66	135

*Significant at the .05 level.

**Significant at the .01 level.

Table 2
Variables Making Significant Contributions to Multiple Correlations

Group	Predictor Variables and Zero Order r's	Multiple R
French Course		
Male group (N=45)	ACE (.424)	.424
Female group (N=145)	ACE (.282), Debilitating Anxiety (-.249)	.324
Mathematics Course		
Male group (N=113)	Socialization (.276), ACE (.265)	.379
Female group (N=62)	Socialization (.391), Sociability (-.337)	.504
Psychology Course		
Male group (N=66)	Achievement via Independence (.373)	.373
Female group (N=135)	ACE (.348), Sense of Well-being (-.176)	.395

Study habits and skills were measured by twenty items selected from the Brown-Holtzman Survey of Study Habits and Attitudes (SSHA)[1] (Brown and Holtzman, 1955). The items selected were those most relevant to the student's habits and skills in utilizing class time, taking and organizing class notes, preparing for examinations and integrating the subject matter.

Five scores of Fricke's (1963) Opinion, Attitude and Interest Survey (OAIS): Achiever Personality (Ach P), Intellectual Quality (Int Q), Creative Personality (Cre P), Social Adjustment (Soc A), and Social Science Interest (SSI) were used in both the 1961 and 1963 studies.

Alpert and Haber's Achievement Anxiety Test was also used in both the 1961 and 1963 samples.

Cattell's Sixteen Personality Factor Questionnaire (16 PF) Form A (Cattell, 1956) was used in the 1961 study only.

Performance Measures

As measures of achievement, we used course grades, the Criteria Test (Milholland, 1964), and a short test of content knowledge. The Criteria Test was designed to measure skills in the interpretation and application of psychological principles learned in the course. The correlation between the Criteria Test score and the course grade was around .50. Both the Criteria Test and the content test were given at the final examination period as part of the total evaluation of students' learning and achievement in the course.

---

[1] Permission has been obtained from Psychological Corporation and the authors to use this measure for research purposes.

In 1961 the content test consisted of 15 multiple-choice items; in 1963 a test of 25 items was given only in the Psychology 101[2] course.

Results

The correlation coefficients between student characteristics and three performance measures used for both years are shown in Table 3.

Intellectual Ability

Intellectual Ability as measured by ACE and SAT was consistently related to performance measures. Correlations with the Introductory Psychology Criteria Test scores ran higher than those with grades, and with the Knowledge test, the disparity being most marked in the 1963 samples. The correlations were within the range usually found in studies of the relationship between intellectual ability and academic performance.

Study Habits and Skills

Study Habits and Skills showed no significant correlation with Criteria Test scores or Knowledge Test scores but did so with course grades in three of the four samples. Correlations were generally lower, however, than those found by Brown and Holtzman (1955) when the grade point average was used as criterion of performance but higher than the non-significant ones reported by Ahmann, Smith and Glock (1958).

OAIS

Of the five OAIS scores used in this study, the Intellectual Quality (Int Q) scale was most closely and consistently related to performance in both the 1961 and the 1963 studies. Correlations with grades were rather low, those with test scores a bit higher. The Intellectual Quality scale is designed to measure those personality attributes associated with intellectual orientation. It might be considered a scale to measure intelligence through the use of non-intellectual material. The fact that intellectual orientation as a personality attribute is outstanding tends to emphasize further the importance of intellectual traits in learning.

The Achiever Personality scale also correlated significantly with grades and Criteria Test scores, but not so highly as Intellectual Quality. Achiever Personality usually correlates more highly than this with grade averages over a semester or year (Fricke, 1963). The other OAIS scores showed only scattered significant correlations.

---

[2] Psychology 101 is An Introduction to Psychology as a Social Science. Psychology 100 is An Introduction to Psychology as a Natural Science. The results on Criteria Test and Course grades were based on Psychology 100 and Psychology 101 students together. In 1961 there was only one general introductory psychology course.

Table 3
Correlation between Various Student Attributes and Course Grades, Criteria Test Scores and Knowledge Test Scores

Measures of Student Characteristics	Correlation with Course Grade				Correlation with Criteria Test Score				Correlation with Knowledge Test Score			
	1961		1963		1961		1963		1961		1963	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
ACE	41**	33**			41**	42**			21**	25**		
SAT			36**	41**			58**	55**			42**	47**
Survey of Study Habits and Skills	23**	15**	10	16*	10	-03	01	00	10	-06	11	12
Achiever Personality	21**	14*	18*	17*	14*	18*	21**	11	25**	01	19	21**
Intellectual Quality	14*	21**	21**	27**	30**	42**	32**	42**	20*	24**	37**	27**
Social Adjustment	11	-06	02	04	03	-04	-01	-05	-10	-05	-07	-07
Creative Personality	09	11	00	09	17*	11	00	20**	11	11	-11	03
Social Science Interest	15*	17*	03	22**	16*	10	03	22**	10	10	-10	10
Debilitating Anxiety	-12	-18**	-20**	-10	-12	-22**	-22**	-19**	06	-09	-20*	-21**
Facilitating Anxiety	15*	18**	18*	14*	06	24**	28**	15*	-02	01	16	21**
N	202	284	218	279	202	284	218	279	164	204	113	167

*Significant at the .05 level.

**Significant at the .01 level.

Test Anxiety

Correlations for Facilitating Anxiety and Debilitating Anxiety were in the expected directions (positive for FA, Negative for DA) but rather low. The results seemed to confirm the facilitating and interfering effects of test anxiety on performance as found by other investigations (Alpert and Haber), 1960) and the first study reported in this paper. However, the contribution of these two scores to predictability of performance was slight.

16 PF Variables

Table 4 presents the correlations of Cattell's 16 PF scores and two of his second order factors with the two performance measures for the 1961 student groups. The coefficients are in general very low, the only correlations as large as 0.2 being those between Cattell's intelligence scale and the Introductory Psychology Criteria Test. The 16PF conscientiousness measure (Factor G) correlated significantly with the Criteria Test for the group of women. The correlation was low (-.13), and the direction was opposite to what Holland (1960) found but consistent with Cattell and Drevdahl's (1955) results. The negative correlation of surgency (F) scale and positive correlations of intelligence (B), radicalism (Q_1) and self-sufficient (Q_2) scales with performance were also in line with Cattell's characterization of achievers.

Multiple Correlations

Twelve regression analyses were performed using Course grades, Criteria Test scores, and Knowledge Test scores as dependent variables.

Table 5 shows the results. As expected, intellectual ability appears on all regression equations and it accounts for most of the predictable variance. Intellectual Quality appears in all equations for predicting Criteria Test scores, and in two equations for predicting Knowledge Test scores, but in none for predicting grades. On the other hand, Social Science Interest and Study Habits and Skills appear among the grade predictors, but not in the predictors of test performance.

If we compare the predicted variance accounted for by the intellectual ability alone (ACE or SAT score) and the predicted variance accounted for by the combination of intellectual ability and certain non-intellectual variables, we find that the mean per cent of variance accounted for in 12 samples increased from 17 per cent to 22 per cent (Table 6). While this is not a large increase the prediction of college performance is a difficult task. Every additional five per cent will be hard won, so that we should not overlook non-intellective variables in predicting short term or long term performance in college and beyond college years.

Discussion

The results of the present study seem to indicate that some CPI scales have greater effectiveness of prediction than the 16PF scales and Fricke's Achiever Personality scale. Currently available measures of non-intellective traits thus contribute little to grade prediction in addition to what can be done with currently available measures of intellectual ability.

Table 4
Correlations between Cattell's 16 PF and Performance Measures for the Men and Women in the 1961 Sample

Variables***		Course Grade		Criteria Test	
		Men	Women	Men	Women
A:	Warmth	-03	-03	01	-13*
B:	Intelligence	09	17*	23**	38**
C:	Emotional Stability	-02	01	03	03
E:	Dominance	06	06	08	03
F:	Surgency	-14*	-15**	-13*	-14*
G:	Conscientiousness	-10	-03	-08	-13*
H:	Adventurous	-03	-07	01	-18**
I:	Sensitivity	-02	05	07	12*
L:	Paranoid Tendency	-03	03	-02	-13*
M:	Bohemian	05	15**	01	03
N:	Shrewdness	-12*	08	-06	-01
O:	Anxious, Insecure	-16*	01	-09	01
Q_1:	Radicalism	12*	18**	13*	17**
Q_2:	Self-sufficient	13*	09	20**	16**
Q_3:	Controlled	-05	08	-03	05
Q_4:	Tense, Excitable	-06	-10	-10	-14*
Second Order Factor					
	Anxiety	-05	-06	-08	-10
	Introversion	11	14*	07	21**
N		290	343	290	343

*Significant at the .05 level.

**Significant at the .01 level.

***The descriptive terms were selected from among those used in the IPAT Handbook for the 16PF (Cattell, Saunders, and Stice, 1957).

Table 5
Variables Making Significant Contributions to Multiple Correlations.

	Group	N	Predictor Variables* and Zero Order r's	Multiple R
I.	Course Grade as Outcome Measure			
	Men, 1961	202	ACE (.41), SSHA (.23), AchP (.21)	.488
	Women, 1961	284	ACE (.33), SSHA (.15), SSI (.17)	.392
	Men, 1963	218	SAT (.36), AchP (.19)	.392
	Women, 1963	279	SAT (.41), SSI (.22), SSHA (.16)	.465
II.	Criteria Test as Outcome Measure			
	Men, 1961	202	ACE (.41), Int Q (.30)	.447
	Women, 1961	284	ACE (.42), Int Q (.42), Ach P (.18), FA (.24)	.552
	Men, 1963	218	SAT (.58), Ach P (.21), Int Q (.33)	.624
	Women, 1963	279	SAT (.55), Int Q (.42)	.578
III.	Knowledge Test as Outcome Measure			
	Men, 1961	164	ACE (.21), Ach P (.25)	.318
	Women, 1961	204	ACE (.25), Int Q (.24)	.294
	Men, 1963	113	SAT (.42), Int Q (.37)	.484
	Women, 1963	167	SAT (.47), Ach P (.21)	.489

*Code to abbreviations:

SSHA:	Survey of Study Habits and Attitudes
Ach P:	Achiever Personality (OAIS)
SSI:	Social Science Interest (OAIS)
Int Q:	Intellectual Quality (OAIS)
FA:	Facilitating Anxiety

Table 6
A Comparison of Variance Accounted for by Intellectual Ability Alone and by the Combination of Intellectual and Non-intellectual Variables.

Sample	N	Per Cent of Variance Accounted for by ACE or SAT	Per Cent of Variance Accounted for by the Multiple R
I. Grades as Criterion			
Men, 1961	202	17	24
Women, 1961	284	11	15
Men, 1963	218	13	15
Women, 1963	279	17	22
II. Criteria Test Score as Criterion			
Men, 1961	202	16	20
Women, 1961	284	19	30
Men, 1963	218	33	39
Women, 1963	279	30	33
III. Knowledge Test Score as Criterion			
Men, 1961	202	04	10
Women, 1961	284	06	09
Men, 1963	218	18	23
Women, 1963	279	22	24
Mean		17	22

This conclusion, it must be emphasized, refers to predicting grades and test scores in only one course; it is possible (although experience indicates it is not highly likely) that results would be somewhat more encouraging if student performance were more widely sampled. Also it should be noted that substantially less than half the variance of our criteria was predictable, leaving considerable room for improvement.

The theme of the present research project has been that we should study the possible interaction effects between college environment including teachers, fellow students and classroom atmosphere and student's personality characteristics affecting achievement. Lavin (1965) in his review of personality factors as predictors for performance stated, "Essentially, we think that the literature presents a somewhat disappointing picture. Yet we do not conclude that personality variables are simply not very useful as predictors. The current disappointing state of affairs may be more a reflection upon how personality variables have been used rather than their absolute usefulness. That is to say, up to now almost all the studies reviewed conceived of the individual as if he were operating in a social vacuum. It might be, however, that personality characteristics are useful in predicting academic performance only when the social setting in which that performance takes place is conceptualized as used as a significant variable." Our studies of interactions, like those reported in this chapter, do not produce striking increases in our ability to predict student achievement. But it may be that progress in this field of many, many, variables will depend upon hacking away at the variance one small step at a time.

Summary

The two studies here reported are investigations of the relative merit of intellectual and non-intellectual variables in predicting performance in introductory college courses. In the first study, scores on the California Psychological Inventory were used as predictors in a second year French course, an elementary mathematics course, and an introductory psychology course. A particular hypothesis was that the Socialization (So) scale would be more related to performance in mathematics while the two measures of achievement potential -- the Achievement via Independence (Ai) and Achievement via Conformance (Ac) scales -- would be more closely related to performance in the French and psychology courses.

No CPI scales significantly correlated with the course grade in French. For mathematics, the Socialization scale was found to correlate significantly with the course grade for both men ($r = .26$) and women ($r = .36$) as predicted, and no other scales correlated as highly. The Ac and Ai scales significantly correlated with performance in psychology for men only (r's = 22,36). These results indicate that different CPI scales predict performance in different courses and support our hypothesis.

The ACE scores showed greater effectiveness for predicting performance than any CPI scale in three of six groups: French, men and women and psychology women. For the other three groups certain CPI scales showed the greater effectiveness.

In the second study, intellectual ability was found to be the most important and the most useful predictor variable for performance in introductory psychology as measured by grade, the Introductory Psychology Criteria Test, and the Knowledge Test. The Intellectual Quality scale of the OAIS, a measure of intellectual orientation, was also found to be a significant predictor variable for performance. Intellectual ability and orientation were more closely related to Criteria Test and Knowledge Test performance than to the course grade.

Study habits and skills, academic motivation, and interest in social science seem to be more closely related to course grade in psychology than to performance on the Criteria Test and Knowledge Test.

Several scales of Cattell's 16PF Questionnaire were found to correlate significantly with course grade and the Introductory Psychology Criteria Test. The coefficients, however, are generally low and did not contribute variance beyond that of our ability measure.

Considerable variance in performance is left unaccounted for when Intellectual ability is used as the predictor. Including these non-intellectual variables, however increases predictability only moderately.

References

Ahmann, J. S., Smith, W. L., and Glock, M.D. Predicting academic success in college by means of a Study Habits and Attitude Inventory. Educational and Psychological Measurement, 1958, 18, 853-857.

Alpert, R. and Haber, R. N. Anxiety in academic achievement situations Journal of Abnormal and Social Psychology. 1960, 61, 207-215.

Bendig, A. W. and Klugh, Helen E. A validation of Gough's Hr scale in predicting academic achievement. Educational and Psychological Measurement. 1956, 16, 516-523.

Brown, W. F., and Holtzman, W. H. A Study-Attitude Questionnaire for predicting academic success. Journal of Educational Psychology, 1955, 46, 75-84.

Cattell, R. B. Sixteen Personality Factor Questionnaire Form A. Champaign, Illinois: Institute for Personality and Ability Testing. 1956.

Cattell, R. B., Saunder, D. R., and Stice, G. Handbook for the Sixteen Personality Factor Questionnaire. Champaign, Ill.: Institute for Personality and Ability Testing, 1957.

Cattell, R. B. and Drevdahl, J. A. A comparison of personality profile (16PF) of eminent researchers with that of eminent teachers and administrators, and the general population. British Journal of Psychology, 1955, 46, 248-261.

Frick, J. W. Improving the prediction of academic achievement by use of the MMPI. Journal of Applied Psychology, 1955, 39, 49-52.

Frick, J. W. and Keener, Helen E. A validation study of the prediction of college achievement. Journal of Applied Psychology, 1956, 40, 251-252.

Fricke, B. G. Opinion, Attitude and Interest Survey Handbook. Ann Arbor: University of Michigan. Evaluation and Examination Division, 1963.

Gough, H. G. The construction of a personality scale to predict scholastic achievement. Journal of Applied Psychology, 1953, 37, 361-366.

Gough, H. G. Manual for the California Psychological Inventory. Palo Alto, California: Consulting Psychologists Press, Inc. 1957.

Gough, H. G. Factors related to differential achievement among gifted persons. American Psychologist, 1955, 10, 327; Institute for Personality Assessment and Research, University of California, Berkeley. Re-issued, December, 1963.

Gough, H. G. Achievement in the first course in psychology as predicted from the California Psychological Inventory. Journal of Psychology, 1964, 57, 419-430.

Gough, H. G. and Fink, M. B. Scholastic achievement among students of average ability as predicted from the California Psychological Inventory. Psychology in the Schools, 1964, 1, 375-380.

Holland, J. L. The prediction of college grades from the California Psychological Inventory and the Scholastic Aptitude test. Journal of Educational Psychology, 1959, 50, 135-142.

Holland, J. L. The prediction of college grades from personality and aptitude variables. Journal of Educational Psychology, 1960, 51, 245-254.

Lavin, D. E. The Prediction of Academic Performance: A Theoretical Analysis and Review of Research. New York: Russell Sage Foundation, 1965.

Milholland, J. E. Measuring cognitive abilities. In McKeachie, W. J., Isaacson, R. L. and Milholland, J. E. Research on the Characteristics of Effective College Teaching. U. S. Office of Education, Cooperative Research Project No. OE 850, Ann Arbor: University of Michigan, Department of Psychology, 1964.

Reese, H. W. Manifest anxiety and achievement test performance. Journal of Educational Psychology, 1961, 52, 132-135.

Rosenberg, L. A., McHenry, T. B. Rosenberg, Anna Maria, and Nichols, R. C. The prediction of academic achievement with the California Psychological Inventory. Journal of Applied Psychology, 1962, 46, 385-388.

Ruebush, B. K. Interfering and facilitating effects of test anxiety. Journal of Abnormal and Social Psychology, 1960, 60, 205-212.

Sarason, I. G. Test anxiety, general anxiety, and intellectual performance. Journal of Consulting Psychology, 1957, 21, 485-490.

Sarason, I. G. Intellectual and personality correlates of test anxiety. Journal of Abnormal and Social Psychology, 1959, 59, 272-275.

Sarason, I. G. Test anxiety and the intellectual performance of college students. Journal of Educational Psychology, 1961, 52, 201-206

Sarason, S. B. and Mandler, G. Some correlates of test anxiety. Journal of Abnormal and Social Psychology, 1952, 47, 810-817.

Taylor, Janet A., A personality scale of manifest anxiety. Journal of Abnormal and Social Psychology, 1953, 48, 285-290.

II - 12: Student Characteristics and Development

Donald R. Brown

The project coding and clerical staff providing coding, scoring and some statistical support for a longitudinal study of personality development and academic achievement carried on by the Center for Research on Learning and Teaching under the direction of Drs. Donald R. Brown, Patricia O'Connor and James Hedegard.

A sample of 600 entering Freshmen distributed amongst the numerous units (educational environments) of the University were given the College and University Environment Scales with expectation instructions, the Thematic Apperception Test, the College Student Questionnaire of the E. T. S., the Omnibus Personality Inventory, an Entering Student Questionnaire constructed for the study, and the Test Anxiety Scale.

In the Spring of the Freshman year, a sample of 300 end-of-the-term Freshmen, chosen from the original group, were retested on the battery.

For initial analysis, interest centered in a group of students from deprived backgrounds attending the University on Opportunity Award Grants and on students participating in an enriched residential program conducted under the direction of Drs. Newcomb and Brown called the Pilot Program. These groups were compared with control groups split by sex in the Honors College and in the College of Literature, Science, and Arts.

Two manuscripts are now in preparation for the issue of The Journal of Social Issues on Negro college performances edited by Dr. Edgar Epps. The computer analysis of the data and the costs of testing materials was borne by the Educational Testing Service, a grant to Newcomb and Brown from the Carnegie Foundation, The Center for Research on Learning and Teaching, and the present project. The following article by Donald Brown reports some of the data.

JOURNAL OF SOCIAL ISSUES
VOLUME XXIII, NUMBER 3, 1967

Student Stress and the Institutional Environment

Donald R. Brown
The University of Michigan

Spencer Brown, whose recent article in the New York *Sunday Times Magazine* has helped many of us over thirty to recover enough perspective to hold our heads almost high again, reports a confrontation between television interviewers and Robert Frost:

> Or we say, as did a group of reporters interviewing Robert Frost on television, that this is the worst or most dangerous or most difficult time Man has ever lived through. They kept trying to badger the octogenarian poet into saying what they wanted him to say; but at last he succeeded in out shouting them and making himself heard: "Yes, yes, yes, it's a terribly difficult time for a man to try to save his soul—about as difficult as it always has been" (Brown, 1966, 57).

Frost, who in his youth went through a protracted period of what we would now term alienation (see, for example, Keniston's discussion), brings, I think, a much needed balm to the troubled contemporary scene. There is student stress and unrest. There has always been unrest and considerable stress amongst university students. The upset follows in part from the nature of growth during late adolescence and therefore we should hope there always will be such unrest. The real question is not if student discontent is new, but rather what accounts for it as a natural phenomenon of growth and what new features of the present educational scene in America can account for its current manifestations and greater visibility.

Today's Visible Student

Consider the following quasi-descriptive statements which seem to me to account for the greater visibility on the national scene of students and their concerns.

. . . The college student population has grown astronomically since 1946. More students—more visibility.

. . . College attendance is increasingly seen as a necessity in present-day America. Student population has increased faster than the general population.

. . . Students come from a wider range of the population on all demographic dimensions than they previously did and, consequently, present new challenges to the colleges as socialization agencies.

. . . The post-Sputnik emphasis on the meritocracy and the seller's market consequent to the increased numbers has put students under great competitive stress for admission even to the less prestigeful institutions.

. . . In purely visibility terms, the news hungry media tend to fan the sparks of unrest by massive and immediate publicity which has no trouble in finding its own performers. Sampson's discussion of this factor, especially with reference to the events at Berkeley, is a good case in point.

. . . The increased sophistication of students, as in all other groups in our society, has produced greater concerns over issues of individual rights, both in the university and in the society.

. . . The better academic preparation in the secondary schools following the massive curricular reform movements which started in the middle '50's has resulted, in part, in students who have tasted good teaching and want more of it.

. . . A society in which affluence and freedom exist side by side with poverty and the enslavement of ignorance, discrimination and hopelessness, has produced contradictions and hypocrisies which all can see.

. . . An increased emphasis on the existential view of self-determination, responsibility and meaningful personal communication is gradually replacing the older pragmatism in action and privacy in personal matters as the mass ethic of the younger intelligentsia.

. . . The inherent loneliness of youth, as it seeks self-definition and clarity, has been increased by the rise in anonymity accompanying the moral blandness of a society in which guilt is hard to define and therefore impossible to expiate.

. . . The increasing technical mechanization of the societal means of dealing with large numbers, as personified in the phobia of the IBM card, threatens the less stout-hearted with an overwhelming crisis of depersonalization.

. . . The changing image of college life from the social to the intellectual has caused increasing numbers of entering students to have high expectations of the curriculum, the faculty, their peers and of the intellectual life itself, which are unfortunately rarely fulfilled.

Student Conceptions of Education as Viewed Historically

It is always helpful before one views with alarm the present situation, as outlined briefly in the preceding set of twelve statements, to look back with Robert Frost and try to understand the alarming situations of the past. Let me start by reference to a statement, called to my attention by Professor George Stern, written by one of the great Eton masters in the 1860's—a period when education of any sort, higher or otherwise, was reserved for the social, cultural and economic elite.

> You go to school at the age of twelve or thirteen; and for the next four or five years you are not engaged so much in acquiring knowledge as in making mental efforts under criticism. A certain amount of knowledge you can indeed with average faculties acquire so as to retain; nor need you regret the hours that you have spent on much that is forgotten, for the shadow of lost knowledge at least protects you from any delusions. You go to a great school, not for knowledge as much as for arts and habits; for the habit of attention, for the art of expression, for the art of assuming at a moment's notice a new intellectual posture, for the art of entering quickly into another person's thoughts for the habit of submitting to censure and refutation, for the art of indicating assent or dissent in graduated terms, for the habits of regarding minute points of accuracy, for the habit of working out what is possible in a given time, for taste, for discrimination, for mental courage and mental soberness. Above all, you go to a great school for self knowledge (Cory, 1938, 208).

While what Cory described as the goals of a liberal arts education hold today as they did in the 1860's in upperclass England, nonetheless, the sociological derivations of our students in the university and college of the 1960's differ considerably, and twenty-five years from now will differ even more.

For many years our students came from much the same social class as those that Cory was describing; but sometime shortly after World War I the proportion of Americans attending high school increased astronomically, and this desire for education burst into the college scene about the time of World War II. It has been increasing ever since so that today we find it necessary to think at least twenty-five years ahead in order to be prepared for the ever-growing onslaught of students. This trend is bound to have far reaching consequences on the nature of education and the needs that students bring to our institutions of higher learning. How has this manifested itself since World War II?

After the War . . .

Immediately following the war, enrollments bulged with veterans flocking to our campuses. These were young men and women of above average college age who had been brought up during the great depression and then tempered in the fiery inferno of World War II. Their values and goals were clear. They knew who their enemies were. First, there were the problems of economic inequity and irresponsibility which could be defeated by the "new economics]". Later there were the evils of totalitarianism and fascism over which they had waged a long and bitter struggle ending in total victory, or so it seemed. They retreated to the security of alma mater, with the help of a benevolent G. I. Bill, to prepare themselves for the fruits of a better life for which they had made so many sacrifices.

This is the generation of the "over thirties". They knew what they were doing in college; their devotion to their studies and pragmatic approach to the curriculum had profound effects on the university. Practically overnight the Hollywood rah-rah culture of the campuses was dealt its death blow and was ultimately finished off by the rise of the meritocracy following the launching of Sputnik. They had seen society marshall its resources and solve, at least for the time, economic and political problems of life or death proportions. Faith in an ordered and continued use of intelligence and sustained effort within the social mechanism was the lesson which they brought out of their experience. By contrast, the present generation, *suffering* from the benefits of affluence, has been insulated from the opportunity (delusional as it may seem) to see society solve problems at first hand.

Children of an Affluent Society . . .

Following this post World War II generation on the campus, there came the children of the newly affluent society. They came to college in numbers larger than ever before and from much more diverse educational and cultural backgrounds. Our attention was called quite forcibly to their appearance and to the disparity from the good old days at "City College" when, as memory had it, no one but first class intellects with real commitment and social concern manifested on every side populated the campuses. Philip Jacob (1960), in his study on value change in college students, summarizes the orientation of this group of the new affluents as (a) an absorbing self-interestedness, directed essentially toward satisfying the desires for material well-being, privacy within one's own male-oriented family domain, and relief from boredom; (b) group dependence, which causes students to bring personal conduct and standards into line with the expectations of groups to whom they turn for a sense of belongingness or look upon as vehicles to self-advancement; (c) social and political indifference and irresponsibility; and (d) an instrumental approach to reason and morality which pulls both reason and moral code into the service of present personal goals rather than acknowledges them as guides of verity and controlling rules of conduct. Jacob was, of course, describing what we all came to think of as the age of student apathy—in many ways a most confronting age during which to be a member of the establishment. Contrast this description with a quote from an article which appeared in the University of Michigan student newspaper. *The American Student is Breaking Out of His Cocoon* is the lead.

> The eruption started in the late 50's when students (where older brothers and sisters had thought the smooth move was to mind one's own business) were stirred by the civil rights movement and began to emerge from their study carrels and fraternity houses to make their dent on the world.
>
> They were a new generation bred in prosperity. These students did not know the depression, they did not remember the war. To seek material reward—the house in Scarsdale, the pretty wife, and the steady job—was not enough because it was so obtainable. To be satisfied with a return to normalcy was not enough because normalcy was already the way of life.
>
> They took their tactics from Gandhi, their idealism from philosophy class, their money from Daddy. They worked hand in hand with civil rights groups such as CORE, NAACP, SNCC and SCLC.
>
> The results of the movement were civil rights acts, the voting rights bill, and the emergence of the American student.
>
> Realizing they had the power to influence events, students broadened their involvement so that it ranged from criticizing foreign policy to organizing the poor.
>
> Thus, the idealism of the civil rights movement led to an alienation from the multi-university and the hope for an idyllic "community of scholars" as the wave of the future. The democratic nature of the movement led students to hope that they could have a meaningful voice in governing their own affairs at their universities; and the success of the movement made students realize that they could implement their goals (*Michigan Daily*, February 20, 1966).

One is aware, naturally, that any attempt to describe all students at all institutions is a task fraught with folly. The above quote from the *Michigan Daily* makes it appear that the vast majority of students were caught up in the rising activism of the civil rights movement and ultimately in the concern about the nature of the university. We know from the work of Katz and Sanford (Katz, 1965) that at most only about 15 per cent of the students on an extremely active campus are so involved. These descriptions, which are applicable to historical periods over the last one hundred years, refer not to the modal situation but rather to the salient situation. They tend to represent the highly visible peaks of student behavior in the mass rather than individual students on the one hand or the majority of students on the other. These are the dominant images that characterized the periods, not necessarily the dominant behavior.

Pluralistic Society . . . Pluralistic University

If we take a frankly sociological view of the matter and attempt to understand these seeming changes in the value orientation of university students as reflections of the population from which they are recruited, we must admit that from this view college going has not only increased numerically but has increasingly attracted segments of our population with different "life expectancies" from those to which the more traditional liberal arts curriculum was originally attuned. We are dealing here with what Joshua Aaron Fishman (1960) referred to as a population change rather than a value change. For example, the increasing numbers of veterans attending college on the G. I. Bill and its various revisions since World War II, working class children attending on government loans or state scholarship programs, the meritorious attending on National Merit Scholarships and similar competitive awards for students with outstanding high school attainment, Negro youth attending on the various new grants directed toward their recruitment, children of immigrants located by the nationwide searches—all of these groups bring new value constellations to our colleges, and the realities of their post-college lives will undoubtedly be different from those of the classical liberal arts college student who could postpone his vocational plans until graduate school and even sometimes forever.

It is interesting to speculate on the differences in the atmosphere of universities which follow from the obvious fact that, not only have the sources of students changed, as the well established universities have increasingly culled off the cream of admissions and thereby gotten a much broader geographic representation in their student bodies and the large state universities have dipped much further down to sample the real sources of intellectual quality in their states, but at the same time, the recruitment of faculty has been very much influenced by these previous population shifts in college attendance. It is not idle speculation to propose that a large per cent of faculty just now entering into senior positions come from the G. I. Bill crop which flooded graduate schools with the sort of Ph.D. material that rarely aspired to such educational heights before. As I look back on my own college experience, I am struck by how much more similar in social economic background current faculties are to their students than was my faculty, which tended to represent a kind of upper class, traditional, scholarly gentleman with considerable family wealth. All of this is bound to make for profound changes in our universities, in student roles and student stress.

The above merely indicates to me the striking pluralism of American society and the consequent pluralism that we can expect in universities.

Student Stereotypes of Education and of the University

For the sake of argument, I will maintain that at present, students come to the university holding to varying degrees one of the following often mutually exclusive stereotypes about the process of education and the university's role in this process.

The Question is of "Being" or of "Doing"

In the first case, the emphasis is upon broadening one's intellectual horizons and consequently maturing and stabilizing the personality. The liberal arts curriculum as classically defined is accepted as the road to these goals and the product is hopefully "cultured". The stress in this type of education is on *being* and not only on *doing*. The image is best represented by the statement quoted from the Eton schoolmaster. This image is today still represented by some of the prestigeful colleges—particularly by some of the members of the Seven Women's College Conference, which are prestigeful not so much because of their lofty educational aims but because these aims are generally supported by the upper classes, and in particular, for women.

College . . . to Acquire Occupational Training

Secondly, there is the much more widely held image of the college as a place to acquire occupational training. As a society becomes both affluent and technologically advanced, the demand for highly trained personnel increases. The university, particularly the public university, experiences great pressure from its constituents to fulfill the demands of the occupational marketplace. At the same time, these pressures heighten the demand for a college degree and cheapen it as a symbol of professionalization. The degree comes to cover a multitude of sins committed in the name of education. All sorts of occupational groups join in and demand college programs in their fields. The emphasis in this kind of education is on *doing* and on being able to *do* rather than on *being*. Students holding this point of view tend not to be attracted by movements espousing social change since their purpose is to join the mainstream at a step up the ladder.

College . . . a Place to "Have Fun"

The third dominant image relates to the collegiate fun culture which is the one most often portrayed in the mass media image of college, particularly before the rise of the meritocracy. The idea of the college embodied in this viewpoint sees it as a never ending series of increasingly romantic social events. Perhaps this image never did exist to the extent that Hollywood and college fiction would have it.

The students, coming as they do from the larger society, bring with them one or another of these three views of higher education. Therefore, they start their college experience with views that are to varying degrees incongruent with the generally held values of the faculty and the high sounding official ideology of the institution. The faculty see themselves as seekers of knowledge in specialized areas and privileged critics of the culture. Indeed, they demand special privileges of tenure and academic freedom in order to permit the unhampered pursuit of these goals. In recent years because of the nature of the market, they have indeed demanded almost complete freedom even from teaching. At the same time they're asked to educate a semicaptive audience which holds values often widely discrepant from their own views and very often widely variant within any given classroom. Here are certainly then the seeds of conflict, and the resolution of conflict is often stressful. The students are not without resources of their own for avoiding the issues of this conflict. They can create a "peer culture" which largely perpetuates the general societal values held outside the college and turn to this subculture for their goals and for their rewards. Or, they can create a "peer-culture" which openly challenges the state of society and provides a comforting way to engage in social and individual revolt.

The society and, indeed often the university, are not completely clear about the goals of higher education. It is not surprising that the students, unable to face the multiplicity of challenges to their self-image and the incongruity between their stereotypic expectation and the institutional ideology, find themselves forced to seek clarity in group identifications which reinforce the old and familiar or set new and often rebellious goals.

The Entering Freshman

Sanford, in *The American College* (1962), has put it well when he describes the freshman as follows:

> The freshman tends to be like a convert to adulthood, an enthusiastic supporter and imitator of adult ways who knows what it is to backslide—which he sometimes does. The achievement of flexible control, the arrangement in which there is genuine freedom of impulses because there is little danger of their getting out of hand lies ahead; nevertheless, impulses are not inhibited or contained with sufficient effectiveness so that the young person can turn his attention to other matters. He is now ready to concentrate upon his relations with the external world—to improve his understanding of that world and to find a place within it (Sanford, 1962, 260).

Upon arrival at college, to some extent, the immediate support of family and community are withdrawn or at least become more distant, often as contact is made with a new set of values. On today's educational scene, the student faces considerable threat and consequent distress from several different sources: (a) highly selective admissions policies place the student into competition with a homogeneously intelligent group of peers in which doubt may be cast on his own academic competence; (b) the relative lack of structure or of the externally imposed structure, to which the student had become accustomed in high school, places him into a new and ambiguous situation; (c) the seemingly sophisticated environment of the university may cast doubts upon the student's own sense of social confidence; (d) the rapidly apparent discrepancy between the student's expectations about university life and its reality provides one further, especially important source of student stress.

The freshman understandably seeks new sources of support in the face of all these assaults. Easier than trying to go it alone is the choice of the readily available support of peers who can minimize the threat by offering subcultures in which the student can more readily determine his own stake in this new venture. If this identification with the peer culture which can exist within and on the periphery of an institution persists for four years in an unaltered form, education is apt to be a failure. It will fail because the student either keeps a value structure which developed before college and which will remain untested against the broader horizons of the university, or because, in his anxiety to avoid rejection by the valued group, he will adopt a set of values by simple imitation. It is important that the institution provide an open channel for its students to switch identities often during their college careers, both to avoid too narrow a range of choices and too early a commitment which will hamstring the individual for life.

The Institution and Student Growth: A Challenge

I would suggest that the problem that faces the university of today and one which will increase in the future is how can an increasingly diverse body of students, drawn more and more widely from all areas of the population as the economic wherewithall for education becomes more available, be brought together in the common pursuit of intellectual and personal goals.

To accomplish this challenging task, the university must bring student groups and their peer-cultures into the service of their own education and development. Colleges must begin to operate on several levels at once. For example, it has long been assumed by the better residential colleges that students largely educate one another. While this may still be true in the small residential colleges, unfortunately with the rapid expansion and increasing specialization of knowledge and the cafeteria-like offerings of our universities, it is rare to find two students coming together outside of class who have a common academic experience to share.

A situation which throws people together in a university but provides little shared intellectual experience will quite naturally lead the students to seek ways of interacting that are not necessarily congruent with the purposes of the university. Therefore, the university should consider new ways of grouping students in the curriculum, in the residential arrangements and in scheduling so that larger numbers will have some common shared intellectual life which will serve as a foundation for intellectual and social interaction. Very often students are forced in their noncurricular groupings into nonintellective areas of concern by denying them easily integrated experiences which stem from the academic content of their institutional endeavor.

The Michigan Projects

Two current projects at the University of Michigan are relevant here. Both of these projects owe a great deal in their original inception and in their ongoing administration to Professor Theodore Newcomb, who throughout his professional career has contributed so significantly to the area now known as the social psychology of higher education.

The first project is the "Pilot Program". It was conceived as a way of reducing the stresses inherent in the divorcement between intellectual values and the residential life of a large campus. This was most manifest in the lack of intellectual life in the residence halls at the University. The "Pilot Program" then is a community in revolt against the forces of anonymity and alienation which threaten to undermine the educational objectives of a large University. The program consists of approximately six hundred volunteer entering freshmen of both sexes in the College of Literature, Science, and the Arts. They are assigned to houses (subunits) within the larger dormitories, known as Pilot Houses. These students are permitted to register for sections of regular introductory freshmen courses which are reserved for members of the Pilot Program only. Thus the student might conceivably find himself in as many as three of his freshmen courses along with his immediate dormitory mates. There is no infringement in any way on the right of the student to choose his curriculum within the structure of the college rules. In addition, the instructors of these sections are made aware of the nature of the Pilot Program and are encouraged to have meals in the Pilot Houses with their students and, indeed, if at all possible, to schedule class meetings within the dormitory as well. A further aspect of the Pilot Program involves the selection of specially selected Resident Fellows who act as counselors and tutors to the students. These Fellows are selected from amongst the graduate students on the basis of their intellectual commitment and ability to serve as intellectual mentors rather than as disciplinarians in the dormitories.

The program is the responsibility of a committee of faculty from the College of Literature, Science and the Arts, and of representatives from the residence halls personnel of the University. This committee is somewhat unusual in that it attempts to institute policies in almost every area of undergraduate education, including staffing of residence halls, design of undergraduate courses, academic counseling, as well as registration and classification procedures. The committee reports directly to the Dean of the College.

So far the program does not sound startlingly different from what has occurred at other institutions in recent years. The program, however, does have some unique features. The program is considered frankly experimental and therefore is being continuously evaluated from a variety of points of view. The one that is of the most interest is the evaluation of the development of students and the implications for student stress and unrest. A study of a small number of pilot students with comparison students in the Literary College as a control shows that the pilot students tend to self-select themselves into the program on the basis of a greater need for contact with faculty. This need for contact with faculty seems to be based upon their recognition of a greater sense of dependency and requirement of intimacy on their part. They tend more often to come from smaller high schools and small towns than from large urban centers. They recognize before coming to the University the threat of size and consequent anonymity. The Pilot Program students at the end of the year express far greater satisfaction with the nature of residential life at the University and, in particular, with the quality of the residential staff. They are more critical and demanding of faculty and faculty performance but are also more satisfied with the progress they have made in the freshman year and the overall quality of the University.

The Pilot Program . . . a Test for a Residential College

Continuing longitudinal studies of these students are now in progress and very detailed data will be available in the near future. Aside from the evaluation of the effects on students, another unique aspect for the Pilot Program is that it is serving as a pilot test, in the literal meaning, for the opening of a residential college for 1200 students this fall (1967) at the University of Michigan. In its capacity as a pilot, special courses designed to be included in the core curriculum of the residential college have been developed and tried out in the pilot program. These courses have been evaluated as well by the committee.

One of the most striking conclusions from the evaluation of the pilot program so far is the amount that can be accomplished in reducing student stress and loneliness while increasing student dignity and competence, as measured by standardized instruments such as the Student Activities Index (Stern, 1958) and College Characteristics Index (Stern and Pace, 1958), by such relatively simple and inexpensive devices as the grouping and scheduling of students. Perhaps the major implication is the obvious working of a Hawthorne effect. If so, then along with Nevitt Sanford, I would say that we should maximize the new and the exciting in our educational arrangements, in order to increase this kind of involvement on the part of the faculty and students.

What Freshmen Expect

One reason for emphasizing techniques such as these for reducing stress can be found in the data which we at the Center for Research on Learning and Teaching at the University of Michigan have collected on nine hundred entering freshmen in fall 1966. In the course of a large number of paper and pencil questionnaires and inventories, the students were asked to complete the College and University Environment Scales (Pace, 1963). Our students filled out the CUES battery before they arrived at the University and were asked to complete the inventory as a description of the University as they expected and hoped it would be. The students under these instructions described their expectations about the University on the five scales which Pace has developed from the instrument as follows:

> They do not see the University as a place where practicality will be greatly emphasized. The practicality scale consists of a . . . combination of items which suggests a practical, instrumental emphasis in the college environment. Procedures, personal status and practical benefits are important. Status is gained by knowing the right people, being in the right groups and doing what is expected. Order and supervision are characteristic of the administration and of classwork. Good fun, school spirit and student leadership in campus social activities are evident (Pace, 1963, 24).

Interestingly enough those items which the students do choose in the scaled direction refer with great agreement to good fun, school spirit and student leadership in campus social activities. Other data from upper classmen would indicate that this part of the entering student's perception of the University is quite unrealistic in terms of present student life.

Similarly, the students score much higher than one would expect on the community scale, which consists of items portraying "a friendly, cohesive, group-oriented campus. The environment is supportive and sympathetic. There is a feeling of group welfare and group loyalty which encompasses the college as a whole. The campus is a community. It has a congenial atmosphere" (Pace, 1963, 24).

While it is true that there is a sense of community to be found on a campus such as that in Ann Arbor, it is almost a caricature to describe it in the above terms. Any student who seriously expects to find this kind of small college and small town atmosphere is bound to have to make some serious readjustments in his expectations, with consequent distress and unrest.

Pace's awareness scale is practically a description of my three dimensions of student growth mentioned above. The items included reflect

> . . . a concern and emphasis upon three sorts of meaning—personal, poetic and political. An emphasis upon self-understanding, reflectiveness, and identity suggest the search for personal meaning. A wide range of opportunities for creative and appreciative relationships to painting, music, drama, poetry, sculpture, architecture, etc., suggest the search for poetic meaning. A concern about events around the world, the welfare of mankind and the present and future condition of man suggests the search for political meaning and idealistic commitment. What seems to be evident in this sort of environment is a stress on awareness, an awareness of self, of society and of esthetic stimuli (Pace, 1963, 23).

On this scale the entering students see the University as being an environment totally of this sort. Of the thirty items on the scale, these pre-freshmen see their prospective campus in this light at least 70 per cent of the time or more on each item. Since the instructions ask the students to describe the University as they hoped and expected to find it, one can assume that the students are commited to the notion of self-development and intellectual growth, albeit, perhaps unrealistically or even romantically. While it is true that the University strives to be this sort of place and, as a function of the self-selection of students who share these expectations, is to a large extent such an environment, it falls far short of the hopes and aspirations of these entering students. Take, for example, the item which is agreed to by 99.7 per cent of the sample, "tutorial and honors programs available to qualified", or the near unanimous agreement with the expectation that "a noted philosopher-theologian would always draw a capacity crowd at a lecture". It seems unlikely that a student who shared the expectations on this scale would not find some disappointment and consequent unrest before the end of the freshman year.

On the other hand the students do seem to be aware of the general lack of conventional propriety on such a campus, since they score extremely low on this scale measuring "an environment that is polite and considerate".

And finally, on Pace's scholarship scale the entering students again score extremely high, agreeing over 75 per cent of the time with

twenty-six out of the thirty items. These items are descriptive of the state of scholarship they expect on the campus. They

> describe an academic scholarly environment. The emphasis is on competitively high academic achievement and a serious interest in scholarship. The pursuit of knowledge and theories, scientific or philosophical, is carried out rigorously and vigorously. Intellectual speculation and interest in ideas as ideas, knowledge for its own sake, and intellectual discipline—all these are characteristic of the environment (Pace, 1963, 25).

Here again one can't help but wonder whether those 80 per cent who expect most professors to be thorough teachers who will probe fundamentals, or those 97 per cent who expect that lectures by famous scientists will always be very well attended, or those 80 per cent who hope that class discussion will typically be vigorous and intense will find their hopes realized.

One cannot help but be impressed by the stress which may well arise in students holding these expectations for their education, when they come up against the realities of academic life on a large, albeit good and exciting campus. Indeed, one wonders if any faculty could live up to the image that these students see as their hope for the next four years.

The University of Michigan's Residential College

The Pilot Program described above is one attempt by the University to find ways of maximizing its realization of this image for the students. Another such attempt at the University of Michigan is the planned residential college for 1200 students in the liberal arts. Here a faculty committee has had the opportunity to plan during a leisurely period of three years a total college complete with its own physical plant. The unique feature of this college, as compared to any other existing small residential college, is that this college is an integral part of a large university with all of the resources of a large university at its service. To maximize these resources, this college will not have a separate faculty but will draw upon the regular faculty of the University for its staff on a part-time basis.

In addition, this plan is unique in that the living arrangements and their relationship to the intellectual environment of the college were designed by faculty in complete coordination with the structure of the curriculum before the college started. Furthermore, there was the opportunity to pretest certain of the new core courses in the Pilot Program described above. Finally, its uniqueness stems from a concerted effort to apply the knowledge of student development and evaluational techniques directly to the continuing evolution of this institution.

As the results of these studies become available, it is assumed that changes will be fed back, not only into the Residential College and the Pilot Program, but into the life of the University itself.

Unrest . . . a Discrepancy Between Expectation and Reality

The implication of these educational experiments for student unrest is quite clear. My assumption has been that a large part of student stress and unrest comes from the discrepancy between students' expectations and preparations for college today and the reality of our institutions. Hopes for intimate contact with faculty and peers, the expectation of a sense of community, the existential hope for deep inter-personal and intra-personal communication, and the need for true intellectual stimulation can make for an exciting student body, but it can also make for a restless college if the institution is not ready to meet these hopes for any other than a small segment of the student body.

It is interesting that in an earlier study (Brown, 1960) in which the faculty's perception of the ideal student was probed, it was found that what the current students seem to expect in terms of the nature of their university experience and of their own development at the university in this day and age was precisely what faculty responded to in their nominations of ideal students during the senior year at Vassar. If we could somehow arrange the mechanisms inherent in large complex environments such as ours so that these two sets of expectations and desires could be better matched, perhaps a very important source of student stress could be eliminated.

In Conclusion . . .

I have tried to focus on some of the causes of student stress and unrest. These are seen to follow directly from the incongruity between the students' desires and expectations—based in large measure on the changing nature of the student population—and the increasing impersonality and anonymity associated with growth in the structure and organization of the American university. Students are seen as undergoing major reorientations in their values as a natural consequence of growth and development within their four years at college. Such growth itself provides a ready source for stress and conflict which is further heightened by the typical incongruity between what the student expects and the reality of his education.

It is only through a thorough understanding of the range and patterns of student hopes and expectations and their ways of dealing with the stress and conflict produced in these four years, that educators can hope to devise the variety of educational environments that will help rather than hinder the emotional and intellectual development of their students.

References

Brown, Donald R. Non-intellective qualities and the perception of the ideal student by college faculty. *The Journal of Educational Sociology*, 6, **33**, 1960, 269–278.

Brown, Spencer. We can't appease the younger generation. *The New York Times Magazine*, November 27, 1966.

Cory, William. Eton Reform. Quoted by G. Adan, "William Cory", *The Cornhill Magazine*, 1938, 208.

Fishman, Joshua Aaron. In Brown, D. R. (Ed.), Social changes and the college student: a symposium. *The Educational Record*, 4, **41**, 1960, 342–346.

Jacob, Philip. Social change and student values. In Brown, D. R. (Ed.), Social changes and the college student: a symposium. *The Educational Record*, 4, **41**, 1960, 338–341.

Michigan Daily. February 20, 1966.

Pace, Charles Robert. *College and university environment scales*. Educational Testing Service, Princeton, New Jersey, 1963.

Sanford, Nevitt. *The American college*. New York: Wiley, 1962.

Stern, George. Student activity index. Psychological Research Center, Syracuse University, 1958.

Stern, George, and Pace, Charles Robert. College characteristics index. Psychological Research Center, Syracuse University, 1958.

II-12: The Results of an Attempt to Match Students and Teachers for Effective Performance

John E. Milholland and Krishna Swaminathan

Introduction

The idea of matching students and teachers is intriguing. Almost everyone feels that certain of his teachers had more impact on him than others and that with some he was able to learn and develop more than with others. On the other side of the fence, any teacher who has invited his students to evaluate his teaching finds the students quite variable in their reactions to him. The resolution of these two realities would seem to be that some teacher-student pairings are fortunate ones, others are not. It is a challenge to try to discover the bases on which students might be assigned to teachers so as to enhance the probabilities of valuable outcomes.

In the precursor of the present project an effort was made to carry out a study of this nature in the Spring semester of 1963. The results were inconclusive (Milholland, 1964) but somewhat encouraging.

The trends that appeared in the sample data were that matching of students and teachers favored performance on the Introductory Psychology Criteria Test but was negatively associated with course grades. Neither effect was statistically significant, however.

In the 1963 study students had to be assigned to the teachers they were supposed to best match, whenever this was possible, without using their TAT protocols, which had not yet been scored. After the TAT's were scored it was obviously not feasible to re-assign students, but we thought we could study the relation of TAT to performance *post-hoc*.

In addition to the use of TAT data, this study differs from the previous one in the basis on which teachers and students were considered to be matched. There certain student personality characteristics of students were matched with Teacher Achievement Cues, Skill, and Culture, as rated by their students in the fall of 1962. In the present study two other student rating factors, Structure and Overload (Isaacson et al., 1964) were also used.

Procedure

Originally the design for this study included the following steps:

1. Classification of teachers into thirds on basis of each of the five factors, Skill, Structure, Overload, Achievement Cues, and Culture, derived from the factor analysis of students' ratings of teachers.
2. Selection of teachers in the highest and lowest thirds on each factor and an examination of their position on each of the other factors. This would have the potential of identifying 162 (i.e., 2×3^4) different teacher types. It was hoped, however, that there would be enough correlation among the factors so that there would be fewer actual types, and even that more than one teacher of a given type could be found. Teachers who were alike would be assigned to two different samples.

3. Each teacher's students were first to be divided by sex and then within each sex into random halves. One half was to be designated the "experimental group" and the other "cross-validation group."
4. In the experimental group, the students were to be further divided into good performers and poor performers on the two outcome measures, course grades and Criteria Test Scores.
5. The good and poor students within each of the two samples of teachers were to be compared to see whether they differed in the motives we had measured with the TAT (*n* Ach, *n* Aff, and *n* Power).
6. On the basis of whatever significant interactions emerged, students in the cross-validation group were to be classified as "good or "poor" matches with their teachers.
7. The grades and Criteria Test Scores of these matched and unmatched students were to be compared.

The above design could not be carried out, however. In the first place, no two teachers were found similar on all five factors. Each one exhibited a unique pattern or type with the result that the second step of the design, providing for replication, could not be fulfilled. Secondly, the number of students who had complete data available was not large enough to provide experimental and validation groups. The total N's available are shown in Table 1.

Table 1
Teacher Pairings and Student Sample Sizes

Teacher Code No.	Section Numbers	Number of students with complete data			Code No. of Paired Teacher
		Men	Women	Total	
2	3,9	8	18	26	14
4	13,24	15	13	28	15
5	2,15	12	6	18	18,13,8
8	4,10	3	11	14	5
10	17,18	12	9	21	17,11
11	1,11	5	8	13	10
13	21,29	10	17	27	5
14	4,11	6	6	12	2
15	10	7	5	12	4
17	2	2	5	7	10
18	5	10	2	12	5
Total 11	19	90	100	190	

The following two modifications were therefore made in the design: 1) instead of trying to find teachers who are alike on all five factors, teachers were chosen who were alike on four of the five factors and different on the fifth. The basic design thus became one of studying a single teacher attribute rather than a combination. 2) As the numbers of cases available were small, the study employed only an experimental group.

Sample and Measures Used

The study was carried out in the Introductory Psychology Courses 100 and 101 at the University of Michigan in the spring of 1963. Altogether 19 teaching fellows with 33 sections consisting of 624 students were available. The pairing of teachers resulted in a sample of 11 teaching fellows with 19 sections. In the 19 sections used, there was a total of 190 students for whom we had complete data. The make-up of the sections is also shown in Table 1. The assessment of students was derived from TAT protocols, yielding measures of students' Achievement motive, Affiliation motive, and Power motive. Cutting scores for high, medium, and low student groups and given in Table 2. Teachers were measured by a Student Rating Form and were assigned scores on Skill, Overload, Structure, Achievement cues, and Culture by using items loaded high on the corresponding factors. The pairing of teachers is shown in Table 3. It should be noted that every pair consisted of a "medium" and a "high" or a "low"; there was no high-low pair.

Table 2

Cutting Scores for n Achievement, n Affiliation and n Power

	Score Ranges		
Motive	High	Medium	Low
n Achievement			
Male	5-28	2-4	0-1
Female	7-15	4-6	0-3
n Affiliation			
Male	6-17	3-5	0-2
Female	9-21	5-8	0-4
n Power			
Male	4-15	1-3	0
Female	3-9	1-2	0

Two types of outcome measures of achievement were used. They were the students' final grades and the Criteria Test scores. Since intellectual ability as measured by SAT (the Scholastic Aptitude Test

Table 3
Pairs of Teaching Fellows Alike in Four Out of Five Student Rating Factors (Skill, Overload, Structure, Ach. Cues, and Culture) and Differing in One Only

Pair No. No.	Factor in Which The Teachers of a Pair Differ	Teacher No. and Position on the Factor		Factor Score
1	Culture	2	Low	3.03
		14	Med.	2.25
2	Overload	4	Med.	3.20
		15	High	2.56
3	Overload	11	Med.	3.34
		10	Low	3.96
4	Ach. Cues	5	High	7.21
		8	Med.	8.92
5	Culture	5	High	1.95
		13	Med.	2.02
6	Structure	18	High	2.29
		5	Med.	2.52
*7	Ach. Cues	10	Med.	8.11
		17	Low	11.71

Cutting Scores For Factors Into Levels of High, Med., and Low

	High	Med.	Low
Culture	1.50-1.95	2.00-2.28	2.42-3.03
Overload	2.56-3.06	3.14-3.44	3.55-4.54
Ach. Cues	6.97-7.45	7.69-8.92	8.97-11.71
Structure	2.14-2.48	2.52-2.88	2.96-4.13

*No comparison was made for this pair as the student N. was too small (See Table 1).

of CEEB) has shown significant main effects with students' grades and Criteria Test Scores, (Lin, 1964) ability was partialled out. The terms "Residual grade" and "Residual Criteria Test Score" refer to the difference between a student's obtained grade or test score and his grade or test score predicted from his SAT score. Table 4 shows the cutting scores for Residual grades and Residual Criteria Test Scores.

Table 4
Cutting Scores of Residual Criteria Test Score
(actual minus score predicted from SAT)
into Low, Medium, and High and also into Low and High

	Low	Medium	High
Male	-35.2800 to 1.0803	1.3736 to 6.8654	6.8932 to 19.8262
Female	-41.4608 to -10.0009	-9.8235 to -5.0009	-4.8879 to 7.6285
		Median Split	
Male	-35.2800 to 4.0803		4.1334 to 19.8262
Female	-41.4608 to 7.7184		-7.5410 to 7.6285

Cutting Scores of Residual Grade (actual minus Grade
predicted from SAT) into Low, Medium, and High
and also into Low and High

	Low	Medium	High
Male	- 2.9163 to - .5416	-.4975 to .3262	.3482 to 1.8110
Female	- 2.9981 to - .3737	-.3641 to .3541	.3776 to 1.7533
		Median Split	
Male	- 2.9163 to .0617		.0837 to 1.8110
Female	- 2.9981 to .0450		- .0215 to 1.7533

Results and Discussion

A summary of the results appears in Table 5. The only situation in which both components of an interaction are statistically significant occurs with teacher Culture and student n Ach (Pair No. 2) for men students on Criteria Test scores. Here high n Ach students do better with the teacher rated high on Culture whereas low n Ach students do better with the medium-rated teacher. This direction of relationship holds for the other comparisons involving this pair of teachers. Some indication that this effect is not simply a peculiarity of the two teachers forming Pair No 2 is to be found in the results for Pair No. 3. Here again there is a tendency for high n Ach students to perform better with the teacher having the higher rating on Culture.

Another interaction appears in the data, although only one of the four comparisons is statistically significant. In Pair 5 men students who were classified as medium n Aff did better with a teacher rated low in Overload whereas medium n Aff women performed better with the teacher rated medium. The data, however, are not sufficiently clear to warrant an attempt at interpretation.

Table 5

Relations of Residual Grades and Residual Criteria Test Scores to Students' Personality Characteristics for the Pairs of Teachers+

Factor on which members of the pair differ	Student Characteristics	Residual Grade		Residual Criteria Test Score	
		Men	Women	Men	Women
1. ACH. CUES					
High Teacher #5	High n Ach	5 > 8	5 > 8	5 > 8	5 > 8*
Med. Teacher #8	Med n Aff	5 > 8	5 > 8**	5 > 8	5 > 8
2. CULTURE					
High Teacher #5	High n Ach	5 > 13	5 > 13	5 > 13**	5 > 13**
Med. Teacher #13	Low n Ach	13 > 5	13 > 5	13 > 5*	13 > 5
3. CULTURE					
Med. Teacher #14	High n Ach	14 > 2**	14 > 2	14 > 2	14 > 2
Low Teacher #2	High n Power	2 > 14	2 > 14	2 > 14	2 > 14**
4. STRUCTURE					
High Teacher #18	High n Ach	5 > 18**	5 > 18	5 > 18*	5 > 18
Med. Teacher #5	Med n Ach	5 > 18**	5 > 18	5 > 18	5 > 18
	Med n Aff	5 > 18	5 > 18	5 > 18	5 > 18**
	High n Power	5 > 18*	5 > 18	5 > 18*	5 > 18
	Low n Power	5 > 18*	5 > 18	5 > 18**	5 > 18
5. OVERLOAD					
Med. Teacher #11	Med n Aff	10 > 11*	11 > 10	10 > 11	11 > 10
Low Teacher #10					

+ The only comparisons shown are those in which there was statistical significance in at least one cell.

* Significant at the .05 level by Mann-Whitney Test.

** Significant at the .10 level by Mann-Whitney Test.

In Pairs No. 1 and No. 4 the advantages were always with one member so that there is no evidence to contradict the suspicion that he was superior with all kinds of students.

In general it would appear that our quest for easily identifiable attributes of teachers and students that improve student achivement has been in vain. With respect to the variables we dealt with, at any rate, the effects, if any, seem to be too slight to make an effort to match students and teachers worthwhile. The effect of general academic ability, plus efforts students make to compensate for what they regard as shortcomings of their teachers may account for the major portion of accomplishment as measured by grades and test scores. If this is true then perhaps the best way for a student to achieve a match with a teacher is on the basis of his impressions of how well he would like him.

References

Isaacson, R. L., McKeachie, W. J., Milholland, J. E., Lin, Y. G., Hofeller, Margaret, Baerwaldt, J. W., and Zinn, K. L. Dimensions of student evaluations of teaching. *Journal of Educational Psychology*, 1964. 55: 344-351.

Lin, YiGuang. Student characteristics related to achievement (main effects). Section V-A in McKeachie, W. J., Isaacson, R. L., and Milholland, J. E. *Research on the Characteristics of Effective College Teaching. Final Report: Cooperative Research Project No. OE850, U. S. Office of Education and The University of Michigan. Ann Arbor: Department of Psychology, The University of Michigan, 1964*.

Milholland, J. E. The matching of students and teachers so as to enhance student achievement. Section VII in McKeachie, W. J., Isaacson, R. L., and Milholland, J. E. *Research on the Characteristics of Effective College Teaching. Final Report: Cooperative Research Project No. OE850, U. S. Office of Education and The University of Michigan. Ann Arbor: Department of Psychology, The University of Michigan, 1964*.

II - 13: The College Dropout: A Study in Self-Definition[1]

Stanton E. Samenow

This is a study of two dozen intellectually capable male dropouts from the University of Michigan's College of Literature, Science and the Arts. At the time they voluntarily withdrew, school was irrelevant to what they wanted in life. These ex-students and a dozen matched students who remained in school were interviewed intensively. The purpose of the study was to examine the act of dropping out of college within the context of the total life picture. This is a phenomenological study of the dropout's experiences, and the style of presentation is to examine the dropout's own statements. It is an attempt to communicate how he views what he is doing now and its perceived relevance or irrelevance to what has happened before and what lies ahead.

All members of this group had dropped out of many enterprises long before they even saw the college campus. The dropouts' lives reveal a repetitious pattern of leaving what they do not like. They are not very certain as to what they want out of life, but they are quite positive that they alone will decide what they are going to do. The dropouts believe they are different from others in the sense of knowing more, having "lived" more and being freer to do as they want. They derive a great deal of personal power from this feeling of uniqueness. They seek excitement, novelty, action, and make sure that others recognize their presence. Quite often behind the wielding of power are overwhelming feelings of powerlessness. The dropouts often present themselves as victims; people just do not do right by them, and they cannot help but be destructive of themselves. These young men want to share, communicate, to love and be loved, but they experience failure, and make new attempts and falter again. Things seem to work out, but soon there is distrust, then a quarrel followed by separation, drifting and latching on to someone new. It is a never-ending, depressing, repetitive cycle. They fear closeness and commitment for fear of being trapped, subjugated and unable to escape.

Most of those who recognize their difficulties do not know what changes to make. Rarely are they certain as to whether it is most important for them to change others or themselves. Usually they are quicker to focus upon things external to themselves over which they have little control. Most of the dropouts work at change only through having more "experiences." To become more contented, they leave what they dislike and try something new. They feel that they must always have an escape hatch. When they leave themselves "no opening" to try something different, only then do they begin to wonder what it is about them that has led to such difficulties.

The concepts of freedom, uniqueness, power, powerlessness and loneliness are discussed in relation to dropouts. These concepts are relevant to understanding all individual participants in the study. On the basis of the particular interplay of life themes and behavior patterns it is possible to identify not only individuals, but also types of dropouts. Three subgroups are hippies, activists and unenthused players of the system's game. The last part of the presentation contains a contrast of these subgroups, then a discussion of the college "stay in" group and finally, a report of a brief followup study of the dropouts.

---

[1] Abstract of a doctoral dissertation submitted to the Department of Psychology, University of Michigan, 1968.

II-14; Evaluative Stress, Fear of Failure and Academic Achievement*

Robert Stakenas

The Problem

The formulation of this problem is an outgrowth of the work of McKeachie (1961) who has proposed and demonstrated that academic performance in college is influenced by interactions between student characteristics and situational cues stemming from teacher behavior. In his social-psychological model he assumes that the behavior of individuals is affected by the arousal of motives which have been acquired from past experience. Therefore, if motives instrumental to attaining course goals can be aroused in students, then their academic achievement should be enhanced. Since the teacher determines the goals of the course, evaluates student performance, accepts or rejects student friendship, etc., each of these behaviors can serve as a cue for motive arousal contingent upon the presence of relevant motives in the student.

Examples of arousable motives well known in the psychological literature are need Achievement (McClelland, 1953), need Affiliation (Atkinson, 1958), and need Power (Atkinson, 1958). The classroom motive arousal model was tested by McKeachie using the above mentioned variables. The most promising results were obtained using the measure of affiliation motivation, as students' need Affiliation was found to interact with teacher warmth in determining course grades. Students high in need Affiliation tended to receive higher grades in classes taught by teachers rated warm and friendly than in classes rated low on this dimension (McKeachie, 1961).

Anxiety, and its arousal, appears to be a variable worthy of consideration within the context of the social-psychological classroom model proposed by McKeachie. Therefore, the problem under investigation in this study is to determine the relationship between student anxiety level, teacher produced stress cues, and academic achievement.

Anxiety and Academic Achievement

There is evidence to support the belief that anxiety arousal has a detrimental effect on the acquisition of new, complex responses. In terms of academic achievement situations, a translation from theory would state that when habit strength of cognitive responses (e.g., content knowledge and problem solving skills relevant to course goals) is high, anxiety arousal should be least detrimental and could even facilitate the emission of these responses. On the other hand, unfamiliarity with content and problem solving skills (low habit strength) at the time of testing should interact with anxiety arousal to impede recall of content poorly assimilated as well as blocking spontaneous learning on test items requiring a high degree of unpracticed problem solving skill or new insight.

---

* This report consists of excerpts from Mr. Stakena's doctoral dissertation, which was supported by the project. The numbering of the tables has been left unchanged; therefore not all numbers appear. Likewise, appendices have not been relabeled although some have been omitted.

If the assumption that anxiety interferes with response acquisition is valid, then it seems likely that what the student does in the way of studying and verbal rehearsal prior to test performance is a more potent determiner of achievement level than the level of arousal during the examination itself. This is not to say that anxiety arousal is irrelevant to academic performance. It may be that manifestation of anxiety takes its heaviest toll when students confront reading assignments and other achievement related tasks during initial contacts when unfamiliarity with achievement goals is maximal.

But what determines whether or not a student engages in the instrumental behaviors essential for academic achievement? The most plausible explanation would seem to lie in the area of motivation and motive arousal.

Before proceeding further, definitions and assumptions with regard to the term motive are in order. Motive, as used here, refers to behavioral dispositions that strive for general goal-states which are gratifying to the individual. It is assumed that these behavioral tendencies are formed during childhood experience and are relatively stable over time. Motives are thought to be latent until situational cues arouse them. A motive is aroused when the person perceives or anticipates that he will gain satisfaction through the performance of an instrumental act. Specific experiences in the person's life history determine the content of motives in terms of goal-states and the preferred instrumental acts which lead to motive satisfaction.

Achievement and Fear of Failure

The Theory

The motive to avoid failure is assumed to be a disposition to become anxious about the possibility of failing whenever the person perceives that his instrumental behavior will be evaluated. Therefore, a person motivated in this way finds achievement tasks unattractive and will avoid them unless constrained by external social forces, e.g., regulations specifying levels of performance necessary for maintaining one's status as a college student (Atkinson and Litwin, 1960).

Achievement tasks are unattractive because they arouse anxiety and feelings of helplessness in dealing with them. The avoidance motive functions to reduce anxiety and the anticipated pain of mortal embarassment associated with inadequate performance. Since achievement tasks are unattractive, it would seem reasonable to assume that situations associated with achievement, e.g., engaging in rehearsal of academic assignments, would also be unattractive and therefore avoided. When penalties for low performance are present and inescapable, the fear of Failure person would be in a state of conflict because avoidance of achievement tasks would result in the undesirable consequence of failure. Consequently, approach tendencies must overcome avoidance tendencies if failure is to be avoided at all. Thus, we have a picture of the fear of Failure person as the last minute "crammer." How effective his cramming will be depends upon his ability and the magnitude and complexity of the achievement task. Cramming strategies could result in low academic performance when the body of content to be assimilated is large or especially complex.

Since it is assumed that the fear of Failure person must be constrained by social forces before he will engage in achievement behavior maximally, this assumption also suggests that he is principally motivated by factors extrinsic to himself. Extrinsic factors would include the frequency of public evaluation, the magnitude and complexity of achievement tasks, and the severity of penalties for poor performance. Since these variables are controlled by the teacher, the manner in which he structures course content and achievement tasks could have an effect on the ultimate level of performance of students high in fear of Failure.

Hypotheses

In order to assess the validity of assumptions underlying the theoretical model presented above, several hypotheses are proposed for empirical testing.

> Hypothesis I: Students high in fear of Failure will tend to achieve higher grades under conditions of high teacher produced evaluative stress than under conditions of low evaluative stress.

The rationale for this hypothesis stems from characteristics of the achievement situation. Although the college classroom clearly satisfies the condition of constraint, the instrumental behavior prior to achievement testing is assumed to be the key determiner of level of performance. High evaluative stress in the form of frequent demands for achievement should increase effort expended toward avoidance of failure. Low evaluative stress would minimize the demand for achievement and hence reduce the perceived necessity for adequate performance. In view of the magnitude and complexity of the content represented in course examinations, cramming should be less effective in increasing levels of performance for large bodies of content arising from infrequent evaluation, than in situations where the magnitude of the task is small. This prediction is not at variance with Atkinson's interpretation of constraint in that both high and low fear of Failure students would be highly motivated during the achievement test. The major difference lies in the quantity of achievement related instrumental behavior prior to the testing situation when constraint is less evident.

> Hypothesis II: Evaluative stress should have little, if any, systematic effect on the academic performance of students low in fear of Failure.

This hypothesis is based on the assumption that achievement tasks and achievement related behaviors are not seen as being unattractive by low fear of Failure students, or as arousing affects which would be disruptive to attaining achievement goals.

Although it has often been assumed that stress disrupts the performance of anxious individuals, studies in "real life" situations have challenged this assumption. A careful review of the experimental literature suggests that this assumption should be modified to emphasize the fact that disruptive effects seem to be maximal during early stages of learning. On the other hand, if we assume adequate levels of habit strength, would test-anxious subjects perform equally well under high and low levels of stress? Before answering this question, Atkinson or Carney (1961) would determine the degree of constraint surrounding the achievement situation. Which is most relevant, then anxiety level or degree of constraint? It could well be that both are operative, thereby creating difficulties in designing a suitable experiment to separate these effects. Since stress is usually induced by a threat of public evaluation, how can a satisfactory testing condition be created where evaluative stress is minimized within acceptable limits of social constraint? Evaluative stress implies that there is a payoff for good performance and penalties for inadequate performance. The latter point is a necessary condition underlying constraint. Therefore, constraint does not appear to be independent of evaluative stress but to be positively related to it. What is a relaxed condition? Is it chiefly an unconstrained one?

In order to clarify this issue, the additional hypotheses are proposed. On the assumption that stress inhibits performance in testing situations, it is predicted that:

> Hypothesis III: Students high in achievement anxiety (fear of Failure) will exhibit lower levels of performance in testing situations perceived as being high in evaluative stress than in testing situations perceived as being low in evaluative stress.

However, in order to be consistent with the rationale underlying the avoidance motive and its relationship to social constraint, the supplementary hypothesis should also be considered.

> Hypothesis IV: Students high in achievement anxiety (fear of Failure) will exhibit higher levels of performance in testing situations that are perceived as being high in constraint than in

testing situations low in constraint.

Conditions specified in both hypotheses are similar. The essential difference stems from assumptions concerning causality. Hypothesis III assumes the causal variable to be anxiety arousal and consequent disruption of performance. Hypothesis IV predicts the opposite outcome based on the interaction of the avoidance motive with constraint, i.e., penalty for nonachievement. It seems clear that anxiety will be aroused under the stress condition regardless of the hypothesis specified. The observed outcome should help to distinguish whether anxiety arousal _per se_ is a principal factor in affecting performance, or whether motive arousal _interacts_ with the dimension of constraint to affect performance also.

What is the effect of stress and constraint on the test performance of low fear of Failure subjects? The theoretical assumptions lead us to predict that:

> Hypothesis V: Students low in achievement anxiety (fear of Failure) will be less affected by differences in degree of constraint than subjects high in achievement anxiety.
>
> Hypothesis VI: Students low in achievement anxiety (fear of Failure) will perform better than students high in achievement anxiety to the extent that the achievement test is relatively brief and unfamiliar.

Performance on tasks which are simple or overlearned are relatively ineffective in differentiating groups varying in anxiety level. Therefore, the factors of time and unfamiliarity are specified in order to enhance the opportunity for performance decrements to occur.

In view of results from previous studies on achievement and avoidance motivation (McClelland _et al._ 1953; Atkinson, 1958), the predicted outcomes are anticipated with _more_ confidence for male than for female subjects.

The Variables

Fear of Failure

Strength of the motive to avoid failure will be inferred from level of achievement anxiety as measured by the debilitating anxiety (DA) scale of the Achievement Anxiety Test (Haber and Alpert, 1960). A high score on the debilitating anxiety scale indicates manifestations of nervousness, etc., which lower one's level of test performance. The presence of these manifestations is assumed to be indicative of the presence of an irrational fear of failing.

Social Constraint

Social constraint is a social-psychological dimension which implies that the person will suffer loss of status and self-esteem by withdrawing from required achievement tasks. Carney (1961) presents evidence to show that this dimension exists and is relevant to academic achievement situations. For the purpose of this study, constraint is determined by the University regulation requiring satisfactory academic performance as a condition for maintaining one's status as a student. Achievement situations not under the jurisdiction of this regulation are assumed to be of low constraint.

Evaluative Stress

Evaluative stress is aroused by situational cues which imply that achievement is expected and that performance is being evaluated. Whether or not cues are stressful depends on the legitimacy of penalties invoked for inadequate performance, legitimacy referring to the constraint dimension. Level of evaluative stress will be inferred from self-reports of perceived stress and the relative frequency of teacher behaviors assumed to be indicative of an emphasis on evaluation.

Study Habits and Persistence

Study habits will be inferred from the subject's score on a scale of study habits and attitudes (Brown and Holtzman, 1955). It is assumed that achievement test performance depends on the quality and quantity of cognitive rehearsal prior to testing. Other things being equal, persons who have developed systematic approaches in dealing with subject matter should attain higher levels of achievement, in the long run, than persons who have poor instrumental study habits.

Academic Performance

During the course of a semester, students have the opportunity to adapt to anxiety arousing stimuli emitted by the instructor, to become familiarized with new content areas, etc. Course grade has been chosen as the dependent variable to examine the effect of anxiety arousal over long periods of time. In order to study the short term effects of anxiety arousal, students will be asked to complete the Introductory Psychology Criteria Test (Milholland, 1964). This test was selected because it is based on the content of introductory psychology and the fact that the test items require complex problem solving skills. Since problems on this test are relatively unique, a component of learning, i.e., unpracticed problem solving, is assumed necessary for successful completion thereby enhancing the opportunity for disruptive anxiety effects to occur.

THE SURVEY STUDY

Results presented in this section were generated by the research design which was formulated in order to test Hypotheses I and II. Subject populations, assessment devices, and procedures incorporated into the design are described below.

Procedure

Course Settings

The subject population included students enrolled in the Introductory Psychology Course and the Introductory Economics Course at the University of Michigan, fall semester of 1964. Both were four credit hour courses requiring a large group lecture and three small discussion group meetings per week. Lectures were given by senior staff members with the discussion groups being conducted by teaching fellows. The two courses differed greatly in evaluation procedures, however.

In Psychology, the teaching fellows were given full responsibility for test construction, scoring criteria, and assignment of final grades. In Economics, department wide examinations were given and scoring of tests was supervised to insure uniform grading criteria. Moreover, Economics grades were assigned on the basis of an absolute scale of test score points, whereas teaching fellows in Psychology tended to assign grades from the distribution of scores relative to their own sections.

Teaching fellows in both departments were supervised by a senior staff member who also was the lecturer. Weekly meetings were held for the purpose of discussing course-related problems and coordinating instruction in general. Both departments administered a student rating form for the purpose of evaluating the course and effectiveness of instruction.

Student Populations

The sampling goal was to survey the entire Introductory Psychology Course and the endeavor was successful in large part. Of the 1,131 students who received a final grade in the course, complete data were obtained from 370 men and 577 women. Twenty-five subjects were rejected from the initial survey because they lacked ability test scores. One teaching fellow failed to administer the pre-test instruments as planned, which accounted for 29 additional subjects. The remaining 130 students missing were absent from class on the day pre-testing was done; no follow-up was attempted on this group. Therefore, the study sample included subjects from 39 of the 40 sections of Introductory Psychology or 84 per cent of the total enrollment.

In order to replicate the study on an independent sample, the Introductory Economics Course was also surveyed. Useable data were obtained on 338 men and 149 women. Thirteen subjects were rejected because they lacked ability test scores and 98 were absent from class on the day pre-test data were collected. Subjects in two sections of the course had to be rejected because another student rating form had been used to assess the teacher's behavior. Therefore, the sample from the Economics Course included 26 of the 28 sections, and 488 of the 613 students who received a final grade in the course.

The Introductory Economics Course included four sections for honors students while there was none designated as such in Introductory Psychology. Because grades were determined on an absolute scale in Economics and level of ability was to be controlled in the statistical analysis, honors sections were kept in the study sample.

Teacher Samples

The 39 sections included in the Psychology sample were taught by eight female and 15 male instructors, four of whom were Ph.D's. The remaining group consisted of second and third year graduate students with varying degrees of previous teaching experience. The 26 sections comprising the Economics sample were taught by two female and 13 male instructors. This group also consisted of graduate students at various levels of advanced study and years of previous teaching experience.

Measures of Student Characteristics

Student characteristics of interest in this study were study habits and skills, debilitating anxiety, and intellectual ability. The study habits scale consisted of 20 items which had been selected from the Brown-Holtzman Survey of Study Habits and Skills[1] (Brown and Holtzman, 1955). The content of these items deals with use of study time, organization of course material, preparing for examinations, integration of subject matter, etc. Fear of Failure was inferred from the debilitating anxiety sub-scale of the Achievement Anxiety Test (Haber and Alpert, 1960). The linguistic score on the American Council on Education Psychological Test (ACE) and verbal score on the Scholastic Aptitude Test (SAT) were used as the measures of ability.

A 10-item Subjective Report Questionnaire was administered to students in Economics. These same 10 items were incorporated into the 21-item rating form used in Psychology (Appendix D). This modification was employed in order to avoid duplication of items already included in the Economics Course rating form. Items in the Subjective Report Questionnaire included 5-interval Likert-type scales pertaining to effort expended in studying, difficulty of the course, perceived pressure and anxiety, as well as open ended questions asking students to explain their particular endorsement of the Likert-type items. The purpose of this instrument was to provide self report data which could be used to validate our measure of evaluative stress.

Measures of Teacher Behavior

Teacher evaluation forms are used in both departments as a matter of standard procedure. Therefore, a five-item instrument designed to assess teacher behaviors thought to be indicative of evaluative stress was included in the rating form ordinarily used by each department. These items required the student to judge the relative frequency with which the teacher emphasized grades, threatened to give unannounced quizzes, judged performance in class, etc. One other item asked students to estimate the amount of competition for grades in order to determine the possible influence of peer group phenomena on academic performance. Relationships between the teacher's behavior and competition for grades could also be determined from this item. Teaching fellows were asked to fill out a questionnaire describing the frequency and kinds of assignments which they used to evaluate their students (Appendix E). The teacher's formal demands for achievement in the form of tests, term papers, etc., were assumed to be concrete forms of evaluative stress.

---

[1] Permission has been obtained from the Psychological Corporation to use this measure for research purposes.

Data Collection

The questionnaire containing the study habits and anxiety scales was administered to each class by the regular teaching fellow. In order to standardize testing procedures, teaching fellows were asked to read aloud a set of instructions provided by the experimenter. An introductory letter familiarizing students with the study preceded the testing. So that pre-testing could be incorporated into functioning of classes as smoothly as possible, each teacher selected the date on which the tests would be given. Data collection of student characteristics was begun on the sixth week and completed by the eleventh week of the semester.

Ability test scores were obtained from the University's Evaluations and Examinations Division. The ACE and SAT had been administered prior to election of the course. In order to use all subjects for whom ability test scores were available. ACE percentile ranks were converted to comparable scaled scores in the SAT distribution. This was done by means of a conversion table based on norms for University of Michigan Freshman compiled in 1955. ([illegible]).

The student rating forms were administered at the close of the semester. A student in each class was placed in charge of distributing and collecting the forms. In keeping with the usual policy, instructors left the classroom while the rating forms were being filled out. Completed forms were not returned to the instructor for his use until after all final grades had been recorded.

Students were not asked to identify themselves on the student rating forms. However, they were asked to indicate their names on the face sheet of the Subjective Report Questionnaire. These face sheets were removed and identification recoded before these forms were made available to teaching fellows. In this way the identity of respondents remained unknown to the teaching staff.

Coding of Open-ended Items

The rationale for using open-ended questions in the Subjective Report Questionnaire was based on the need for validating the evaluative stress scale. It seemed reasonable to assume that if the teacher's behavior has a significant impact on motivation to achieve, then students would be able to report this in response to questions such as, "What factors do you think account for the amount of studying that you did in this course?" On the basis of a priori considerations, it seemed reasonable to expect that significant motivational effects could stem from (a) the teacher's demands for achievement, (b) the student's attraction for the content, and (c) the level of difficulty of the subject matter itself. Thus, the goal was to separate motivational effects that could be due to any one of these three basic factors.

In order to detrive a coding scheme, a large sample of questionnaires was examined and responses were categorized into the areas mentioned above as well as new areas suggested by the responses themselves. On the basis of this sampling procedure, several nominal categories were defined for items 7, 9, and 11 of the Subjective Report Questionnaire. The coding schemata for these items can be found in Appendix G.

Actual scoring was begun only after the two coders had worked on practice materials. Per cent agreement for four independent blocks of approximately 80 practice trials was 80 per cent, 89 per cent, 89 per cent, and 91 per cent. It was observed that discrepancies during the practice trials seemed to be due to human errors rather than to ambiguities inherent in the coding categories. Because of the relatively weak nominal scale employed, it seemed important to keep scoring errors at an absolute minimum. Therefore, both coders scored all of the questionnaires independently. By continuously checking for interscorer agreement, errors were detected. Whenever disagreements occurred, they were resolved by discussion so that the overall agreement was very close to 100 per cent.

Levels for the Treatments x Levels Design

In view of the reported intercorrelations between specific anxiety scales, intellectual ability, and academic achievement, statistical techniques were used to control for the effect of these dimensions on the dependent variable, course grade. Therefore, a treatments x levels (fixed effects) analysis of variance design was used to estimate the level of significance of the results. However, the existence of correlations among the independent variables created problems in maintaining equal cell frequencies for the statistical design. When test score distributions were trichotomized independently, it was found that certain cells were nearly vacant while other cells were disproportionately full. This was due chiefly to the inverse relationship between debilitating anxiety and ability (see Tables 2 and 3). For example, very few subjects were found in the high ability-high anxiety or low ability-low anxiety cells. In order to meet the condition of equal cell frequencies and still preserve matching of subjects across treatments, the following procedure was used.

TABLE 2

INTERCORRELATION OF VARIABLES FOR 370 MEN AND 577 WOMEN IN INTRODUCTORY PSYCHOLOGY

(Fall, 1964)

		DA	SATV	Grades
SH	Men	-.235**	.010	.181**
	Women	-.297**	.038	.220**
DA	Men		-.334**	-.251**
	Women		-.268**	-.151 **
SATV	Men			.419**
	Women			.402**

*p $\leq$ .05 (2 tailed) **p $\leq$ .01 (2 tailed)

TABLE 3

INTERCORRELATION OF VARIABLES FOR 338 MEN AND 149 WOMEN IN INTRODUCTORY ECONOMICS

(Fall, 1964)

		DA	SATV	Grades
SH	Men	-.204**	.022	.205**
	Women	-.177	.053	.312**
DA	Men		-.280**	-.179**
	Women		-.292**	-.202*
SATV	Men			.424**
	Women			.330**

*p $\leq$ .05 (2 tailed) **p $\leq$ .01 (2 tailed)

1. Trichotomize the ability distribution first since this variable is most highly correlated with the dependent variable.

2. Trichotomize anxiety scores within each level of ability.

3. Dichotomize study habits scores within each level of anxiety.

Although this procedure resulted in different breaking points on study habits and anxiety across levels of ability, subjects were well-matched within each level of ability and across conditions. But even with the use of this modified classification procedure, there were still unequal cell frequencies for any given four-dimensional array. Therefore, it was decided to strive for a minimum of five subjects per cell. After being classified on the four dimensions, subjects within a cell were numbered-off and then five were selected by means of a random numbers table.

Due to chance factors in sampling and the difficulty encountered in classifying subjects simultaneously on four dimensions, it was necessary to supply missing data in order to maintain five replications per cell. Scores for missing subjects were determined by computing the mean of a given cell from the actual cases and then using this value as the missing score (Lindquist, 1958). Of the 12 tables used in the data analysis, there were two tables with complete data, four tables requiring at least one synthetic score, five requiring two synthetic scores, and only one table requiring five synthetic scores. In only one instance did a deficient cell require two synthetic scores, with all other deficient cells requiring one.

To enhance the possibility for anxiety effects to emerge, only subjects from the upper 33 per cent and lower 33 per cent of the anxiety score distribution were included in the analysis. The actual scores used for determining levels for each variable are given in Appendix J.

When the 149 female subjects in Economics were classified on all four dimensions, there were many cells with frequencies far short of the five replications desired. Therefore, it was necessary to omit these subjects from the four-way analysis of variance.

Standardization of Grades

Since assignment of grades in Psychology was left to the discretion of each teaching fellow, grades within each section were converted to standard scores with a mean of 50 and a standard deviation of 10. This was not done in Economics because of the use of uniform testing procedures and assigning of grades on the basis of an absolute scale of test score points.

Results

Intercorrelations of Student Characteristics

Independent and dependent variables were intercorrelated prior to carrying out the multivariate analysis. The Pearson product-moment coefficients are reported in Tables 2 and 3. Since sex differences were anticipated, analyses were carried out separately for men and women. Distribution characteristics for these variables can be found in Appendix H. Reliability coefficients are reported in Appendix I..

Teacher Ratings

The experimental hypotheses presupposed that there would be sufficient variability in teacher ratings, from class to class, to permit a clear evaluation of their effect. This did not prove to be the case as can be observed in Tables 4-7. Mean item ratings tended to fall below the neutral point indicating a low level of evaluative stress cues stemming from the teacher's behavior.

The relative frequency of competition for grades was somewhat more promising as mean ratings did span the neutral point with five out of 65 sections being rated as having competition often. However, in spite of the increase in relative frequency, variability was still restricted. The distribution of ratings for item four can be seen in Table 8.

TABLE 8

MEAN ITEM RATINGS FOR ITEM FOUR[e]

Rating	Score Range	Number of Sections	
		Psych	Econ
Most of the time	1.00 - 1.49	0	0
Often	1.50 - 2.49	4	1
Occasionally	2.50 - 3.49	32	25
Seldom	3.50 - 4.49	3	0
Hardly at all	4.50 - 5.00	0	0
Total		39	26

[e] Most students in class competed for grades. . . .

TABLE 4

MEAN ITEM RATINGS FOR ITEM ONE[a]

Rating	Score Range	Number of Sections	
		Psych	Econ
Very often	1.00 - 1.49	0	0
Often	1.50 - 2.49	0	0
Occasionally	2.50 - 3.49	0	0
Seldom	3.50 - 4.49	1	4
Almost never	4.50 - 5.00	38	22
Total		39	26

[a] How often did the instructor warn the class to expect unannounced quizzes?

TABLE 5

MEAN ITEM RATINGS FOR ITEM TWO[b]

Rating	Score Range	Number of Sections	
		Psych	Econ
Four or more times	1.00 - 1.49	0	0
Three times	1.50 - 2.49	0	0
Two times	2.50 - 3.49	0	2
One time	3.50 - 4.49	1	4
At no time	4.50 - 5.00	38	20
Total		39	26

[b] Unannounced quizzes were given in this class.....

TABLE 6

MEAN ITEM RATINGS FOR ITEM THREE[c]

Rating	Score Range	Number of Sections	
		Psych	Econ
Very often	1.00 - 1.49	0	0
Quite often	1.50 - 2.49	0	0
Sometimes	2.50 - 3.49	9	0
Hardly ever	3.50 - 4.49	30	25
Almost never	4.50 - 5.00	0	1
Total		39	26

[c] The teacher strongly emphasized grades. . . .

TABLE 7

MEAN ITEM RATINGS FOR ITEM FIVE[d]

Rating	Score Range	Number of Sections	
		Psych	Econ
Almost always occurred	1.00 - 1.49	0	0
Often occurred	1.50 - 2.49	0	0
Occasionally occurred	2.50 - 3.49	4	0
Seldom occurred	3.50 - 4.49	34	24
Almost never occurred	4.50 - 5.00	1	2
Total		39	26

[d] The teacher made it clear that he was continually judging the worth of a student's performance in class.

It had been assumed that the instructor's demands for achievement via graded tests would be an important source of stress arousal. Therefore, the actual frequency of graded tests was determined. Teaching fellows in Psychology varied in the number of hour examinations assigned. In Economics, hour examinations were given on a departmental basis and thus did not vary in number. However, Economics teaching fellows were given the option of assigning graded quizzes. The frequency distributions for teacher assigned tests and quizzes are given in Table 9.

TABLE 9

FREQUENCY OF TEACHER ASSIGNED TESTS

Frequency	Number of Sections	
	Psych: Hour exams	Econ: Quizzes
Four or more tests	2	4
Three tests	12	7
Two tests	20	8
One test	5	7
None	0	0
Total	39	26

Before summing item ratings to obtain an overall scale score for a teacher, item means were intercorrelated to determine whether or not a single dimension was being tapped. High intercorrelations between items would be taken as justification for deriving a combined score. Because of the extremely restricted range of scores, items one and two were eliminated from further analysis. The item intercorrelations are given in Table 10.

There were only two coefficients significantly different from zero. In Psychology, students were seen as competing for grades in classes taught by instructors rated as tending to emphasize them (r = .58). This relationship did not appear in the Economics course (r = -.08), although Economics instructors who tended to give more quizzes were also rated as emphasizing grades (r = .47).

In view of the low degree of relationship between items as well as the lack of similarity in correlational patterns between the two courses, the hypotheses were tested separately for the teacher behaviors assessed. In this way, the motivational

TABLE 10

INTERCORRELATION OF ITEM MEANS FOR TEACHER PRODUCED EVALUATIVE STRESS

Item Number	ES4	ES5	Number of tests
ES3[a] Psychology	.58**	-.03	.28
Economics	-.08	-.15	.47*
ES4[b] Psychology		-.28	.19
Economics		.30	.11
ES5[c] Psychology			-.22
Economics			.03

**p = .01 *p = .05

[a] The teacher strongly emphasized grades. . . .
[b] Most students in class competed for grades. . . .
[c] The teacher . . . judged the . . . student's performance in class.

effect of each particular behavior could be determined. Because of the narrow range of evaluative stress cues, only classes falling in the upper 33 per cent and lower 33 per cent of each item distribution were used in the statistical analysis.

The Analysis of Variance

The predicted interaction between fear of Failure and teacher produced evaluative stress failed to materialize. No significant main effects for the teacher behaviors were observed either. (Variance estimates, F-ratios, and probability levels for the complete analysis can be found in Appendix K.) However, there were several main effects, for the student measures, which were consistent with results found in other studies using these same variables. For example, a significant main effect for ability was observed in 11 of the 12 analyses.[2] (See Table 11.) These effects were consistent with the results of the correlational analysis presented in Tables 2 and 3.

---

[2] Subjects included in the analysis of variance for one evaluative stress item were returned to the sample before subjects were drawn at random for the next test. Therefore, tests of significance for samples drawn from a given population, e.g., men in Economics, are not independent of each other.

TABLE 11

MEAN GRADE BY LEVEL OF ABILITY FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS[a]

(Fall, 1964)

Sample	Low SATV	Mid SATV	High SATV	df	F	P
Men in Psychology	46.58[b]	50.80	52.90	2,96	5.47	.01
Men in Economics	2.08[c]	2.68	2.95	2,96	10.01	.005
Women in Psychology	48.30[b]	48.83	55.25	2,96	7.38	.01

[a] Results in this table are typical of those observed. Means by level of ability for all 12 analyses can be found in Table 46 of Appendix K.

[b] Grades in Psychology were converted to standard scores within sections (Mean of 50, S.D. of 10).

[c] Means in Economics are based on raw grades (A=4, B=3, C=2, D=1, E=0).

Main effects for study habits and debilitating anxiety also appeared but with less consistency. Students scoring high in study habits earned higher grades than students low in study habits (Table 12). This was more marked for men than for women. Although effects tended to be in the expected direction for women in Psychology, all failed to reach the 5 per cent level of significance (Table 47, Appendix K).

Debilitating anxiety tended to differentiate levels of performance more consistently in Psychology than in Economics. Psychology students low in debilitating anxiety received higher grades on the average than students high in debilitating anxiety (Table 13). This effect was barely discernible for men in Economics as only one of four tests approached the 5 per cent level of significance for these subjects (Table 48, Appendix K).

The analysis of variance generated significant F-ratios for 1 three-way and 2 two-way interactions (Tables 35, 37, and 45 in Appendix K). Means for each interaction were plotted within each course group as well as across independent samples. Interaction patterns were inconsistent both within and between groups. Moreover, there were no theoretical reasons to expect these outcomes. Because of the inconsistencies in the interaction patterns, as well as the large number of non-independent tests carried out, it was concluded that these interaction effects were most likely due to errors generated by sampling rather than to any underlying

TABLE 12

MEAN GRADE BY LEVEL OF STUDY HABITS FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS[a]
(Fall, 1964)

Sample	Low SH	High SH	df	F	P
Men in Psychology	49.07[b]	50.70	1,96	.80	N.S.
Men in Economics	2.30[c]	2.65	1,96	4.71	.05
Women in Psychology	48.22[b]	50.47	1,96	1.55	N.S.

[a] Results in this table are typical of those observed. Means by level of study habits for all 12 analyses can be found in Table 47 of Appendix K.

[b] Grades in Psychology were converted to standard scores within sections (Mean of 50, S.D. of 10).

[c] Means in Economics are based on raw grades (A=4, B=3, C=2, D=1, E=0).

TABLE 13

MEAN GRADE BY LEVEL OF DEBILITATING ANXIETY FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS[a]
(Fall, 1964)

Sample	Low DA	High DA	df	F	P
Men in Psychology	52.25[b]	48.07	1,96	4.85	.05
Men in Economics	2.50[c]	2.42	1,96	.27	N.S.
Women in Psychology	52.77[b]	49.05	1,96	5.66	.025

[a] Results in this table are typical of those observed. Means by level of debilitating anxiety for all 12 analyses can be found in Table 48 of Appendix K.

[b] Grades in Psychology were converted to standard scores within sections (Mean of 50, S.D. of 10).

[c] Means of Economics are based on raw grades (A=4, B=3, C=2, D=1, E=0).

psychological phenomena.

In view of the inconclusiveness of results for the evaluative stress dimension, data obtained from the Subjective Report Questionnaire were omitted from the remainder of this particular study.

Discussion

The purpose of this study was to examine the long term effects of anxiety arousal in academic achievement situations. It was predicted that students high in fear of Failure would achieve higher levels of academic achievement under high than under low levels of teacher produced evaluative stress. The results obtained clearly fail to support this hypothesis. However, results observed for the student characteristics of intellectual ability, study habits, and debilitating anxiety provide additional evidence for these measures as predictors of academic achievement.

Ability, as measured by the verbal scales of the ACE and SAT, was found to be the most potent predictor in both Economics and Psychology (Table 11). But some interesting course differences are suggested by the pattern of results obtained for the study habits and debilitating anxiety scales. For example, a study habits main effect appeared more consistently for men in Economics than for men and women in Psychology (Table 47, Appendix K). Contrariwise, a main effect for anxiety tended to be more consistent for Psychology students than for men in Economics (Table 48, Appendix K). These outcomes, though they are not conclusive, suggest the possibility of a course x anxiety x study habits interaction. On the other hand, sampling error could also have accounted for the lack of consistency in view of the large number of samples drawn from each course and sex group. Therefore, multiple correlation techniques were used in order to study the effect of these variables on academic performance more precisely. Results of this analysis are given in Table 14.

TABLE 14

ZERO-ORDER AND MULTIPLE CORRELATIONS FOR ABILITY, STUDY HABITS, AND DEBILITATING ANXIETY IN PREDICTING GRADES IN PSYCHOLOGY AND ECONOMICS
(Fall, 1964)

	Grade·SATV	Grade·SATV, DA	Grade·SATV, SH
Men in Psychology (N = 370)	.42	.44	.45
Men in Economics (N = 338)	.42	.42	.46
Women in Psychology (N = 577)	.40	.40	.45

(All coefficients are significant: p = .01 or less, 2 tailed.)

As can be seen in Tables 2 and 3, verbal ability is the best single predictor of achievement of the student measures used in this study. Study habits accounts for additional variance when used in combination with ability (Table 14), but the magnitude of this gain (2.6 to 4.3 per cent) is small compared to the variance accounted for by ability (16 to 17.6 per cent). Anxiety in combination with ability failed to enhance predictive power for women in Psychology and men in Economics although a small gain was observed for men in Psychology. On the basis of these results, it seems most reasonable to conclude that inconsistencies observed in the results within and between various samples were due to sampling errors rather than to course differences, such as assessment procedures or the course content itself.

What of our attempt to clarify the relationship between measures of verbal aptitude and specific anxiety scales? Results of the multiple correlational analysis and the analysis of variance provide contradictory evidence in that expected anxiety effects did not emerge with any reassuring consistency when intellectual ability was taken into account. If anxiety is a noncognitive component of intellectual performance, these results suggest that its effect on academic achievement is small and can be mitigated by compensatory behaviors such as good study habits (Economics men and Psychology women, Table 14).

How can we account for the lack of significant effects for the evaluative stress dimension? Although results obtained with this variable failed to support our predictions, it does not necessarily follow that this dimension is irrelevant to academic performance. It may well be that the teacher behaviors used in operationalizing this variable were insensitive indicators as suggested by the lack of variability among teachers as well as the relatively infrequent occurrence of these behaviors in the classrooms surveyed. Moreover, the use of untrained observers (the students) may have resulted in less reliable assessments than those obtainable by more highly trained observers. The fact that students were asked to make one global rating at the conclusion of the course could reduce the precision of measurement, also. A single rating such as this would be less reliable than repeated judgments based on time sampling procedures.

On the basis of these results, what do we conclude? First of all, our central hypothesis remains unconfirmed, as we have not been able to show that there are any long term effects on academic achievement due to anxiety aroused by the teacher's behavior. On the more positive side, it seems clear that measures of ability continue to be the best predictors of academic achievement. Although the noncognitive variables of study habits and debilitating anxiety can account for variance in addition to that which is accounted for by measures of ability, the gain in predictive power is small.

Summary

This study was designed to investigate the long term effects of anxiety arousal in academic achievement situations. Relevant hypotheses were derived from a theoretical model based on the properties of an avoidance motive, the fear of Failure.

Independent samples of subjects were obtained from an introductory Economics and an introductory Psychology course at the University of Michigan. A multivariate analysis was carried out using intellectual ability, study habits, debilitating anxiety, and evaluative stress (as inferred from ratings of teacher behavior). as independent variables. The dependent variable was course grade.

The central hypothesis that students high in fear of Failure would achieve higher grades in classes characterized by high rather than low evaluative stress was not supported by the data. However, a strong main effect for verbal ability was observed. Results derived from a multiple correlational analysis suggested that the noncognitive variables of study habits and debilitating anxiety enhance accuracy of predicting grades very little when used in combination with measures of ability.

THE EXPERIMENTAL STUDY

Procedure

Student Subjects

Subjects for the evaluative (high stress) condition were obtained through the cooperation of five teaching fellows who agreed to use the Introductory Psychology Criteria Test as part of their final examination. There were students from nine sections involved. A small number of these subjects had been absent during the survey study pretest so that they lacked study habits and anxiety test scores. Complete data were obtained for 96 men and 99 women in the evaluative condition.

Subjects participating in the nonevaluative (low stress) condition were enrolled in the Introductory Psychology Course also, and were obtained from the departmental subject pool. These subjects were drawn from 14 of the 39 course sections and comprised a reasonably representative sample of subjects enrolled in Introductory Psychology. They were assigned to one of two evening testing sessions on the basis of their time schedules. Of the 223 subjects contacted, 178 were able to participate in the two regular sessions. A make-up session was held and 21 more persons completed the test forms. After a series of follow-up attempts, complete data were obtained on 101 men and 108 women (or 209 of the original 223) for the low stress condition.

Measures

Student characteristics of interest in the experimental study were study habits, debilitating anxiety and intellectual ability. These measures have already been described. The dependent variable was score on the Introductory Psychology Criteria Test, Form X (Milholland, 1964). This test was constructed in order to assess cognitive abilities as defined in the Taxonomy of Educational Objectives (Bloom, 1956). Items are based on the content of Introductory Psychology and are designed to tap intellectual abilities such as interpretation, analysis of relationships, judgments in terms of external criteria, etc. The fact that complex cognitive abilities were being assessed provided a relatively unique task for subjects to perform. It was anticipated that unfamiliarity with these particular kinds of test problems would bring out differences in the performance of groups differing in level of anxiety and stress.

Data Collection

The nonevaluative or low stress testing sessions were held during the eleventh week of the semester. Subjects were asked to meet in one of two large groups. The testing room was large enough so the approximately 80 subjects could be placed in alternate seats. After three female assistants distributed Criteria Test booklets, IBM answer sheets, and pencils, the following instructions were read aloud by the experimenter:

> The test which you are about to take is based on the content of introductory psychology. This test is more than a test of knowledge, however, as the problems have been designed to test psychological thinking processes such as application of principles, analysis of relationships, and critical thinking. You are asked to do your best and to earn as high a score as possible since your group's results will be compared with the results of another group of students who will also be taking this test. It should be emphasized, however, that test scores obtained this evening will not be used in any way in determining your course grade in psychology. There is no penalty for guessing. Therefore, be sure to answer all 62 questions. You may begin.

At the end of 40 minutes, subjects were reminded that they could take as much time as desired. After finishing the Criteria Test, each subject filled out a questionnaire containing the study habits and the debilitating anxiety scales. Subjects were allowed to leave after completing the second instrument. Almost all subjects were finished with both tests in the space of an hour and 15 minutes with only a few taking the opportunity to stay longer.

Since the stress condition was structured in the context of final examinations, it was assumed that high evaluative stress would be present in view of the importance of these examinations in determining course grades. Therefore, no special instructions to induce stress were given. However, students were told that the Criteria Test was a department examination so that some of the items might not be familiar. In order to reduce the possibility of coaching prior to the final examination, teaching fellows were given the option of scoring only those items which they felt were related to their own objectives. However, all 60 items were scored for this study.

In order to assess the perceived level of stressfulness in both testing conditions two items were added to the Criteria Test in the low stress condition. These same items were included on a 5-item "test reactionnaire" which was given to students at the conclusion of the final examination. Students were not required to identify themselves on the "test reactionnaire." The items were:

How much pressure did you feel you were under while taking this test?

How nervous did you feel while you were taking this test?

Each item was rated on a 5-point scale with one signifying a great deal of pressure/nervousness, and five indicating little, if any, pressure/nervousness. The item means were 3.34 for the evaluative condition, and 4.21 for the nonevaluative condition. Although students reported experiencing only an average amount of pressure/nervousness during the final examination, the difference between item means was significant ($t = 9.24$, $p < .01$, 2 tail) and in the expected direction suggesting that the situational cues had been effective in producing different levels of perceived stress.

A treatments x levels (fixed effects) analysis of variance design was used to analyze the data. Problems were encountered in maintaining equal cell frequencies for the four-way analysis of variance similar to those encountered in the survey study. Therefore, the same procedures used for that study for determining levels were also used in categorizing subjects for this analysis. Scores used for breaking points on each variable are given in Tables 32-33, Appendix J. Since sex differences were anticipated, separate analyses were done for men and women.

The research design called for five subjects per cell. But because of chance factors in subject selection, it was necessary to supply missing data in order to maintain the desired number of replications in each cell. Scores for missing subjects were generated by computing the mean of the deficient cell based on the actual cases and then using this value as the missing score (Lindquist, 1958). Only one case of missing data had to be provided for male subjects. There were four deficient cells for females requiring one additional synthetic score, and one cell requiring two scores.

To enhance the opportunity for anxiety effects to emerge, only subjects from the upper 33 per cent and lower 33 per cent of the anxiety score distribution were used in the analysis.

Results

Independent and dependent variables were intercorrelated prior to carrying out the analysis of variance. These Pearson product-moment correlation coefficients are reported in Tables 15 and 16. Distribution characteristics for the variables can be found in Appendix H, and reliability coefficients in Appendix I.

Although it had been found that the verbal score of the Scholastic Aptitude Test was most highly correlated with course grade in the survey study, it was found that the SAT total score tended to be a better predictor of Criteria Test score (Tables 15 and 16). Therefore, SAT total score was used as the measure of ability in the analysis of variance design.

Complete tables of variance estimates, F-ratios, and significance levels for the four-way analysis of variance are reported in Appendix L.

Main effects and interactions found to be significant at or approaching the 5 per cent level are reported in Table 17. It can be seen that there was a highly significant main effect for ability for both men and women.

Results shown in Table 18 reveal a highly significant main effect for level of evaluative stress for both men and women. As can be observed in the Table, students earned higher Criteria Test scores when constrained by penalties for low performance than in the situation where constraint was absent ($p < .005$).

The results in Table 19 show a weak main effect for level of anxiety for men only. Moreover, there was no anxiety x stress interaction which had been expected on the basis of theory.

Although there was no main effect for study habits, an interesting interaction between study habits and debilitating anxiety occurred. This interaction was highly significant for women ($p < .01$), but only approached significance for men ($.05 < p < .10$). Table 20 reveals that students who are low in anxiety and high in study habits earned higher Criteria Test scores than students low in anxiety and low in study habits. Level of study habits did not differentiate groups high in debilitating anxiety.

TABLE 15

INTERCORRELATION OF VARIABLES FOR 101 MEN AND 108 WOMEN IN INTRODUCTORY PSYCHOLOGY, CRITERIA TEST GIVEN UNDER NONEVALUATIVE CONDITIONS

(Fall, 1964)

		DA	SATV	SAT Total	Criteria Test Score
SH	Men	-.231*	-.092	-.073	.006
	Women	-.483*	-.004	.047	.082
DA	Men		-.346**	-.383**	-.355**
	Women		-.226*	-.148	-.132
SATV	Men			.890**	.587**
	Women			.746**	.649**
SAT Total	Men				.635**
	Women				.573**

*p < .05 (2 tailed) **p < .01 (2 tailed)

TABLE 16

INTERCORRELATION OF VARIABLES FOR 96 MEN AND 99 WOMEN IN INTRODUCTORY PSYCHOLOGY, CRITERIA TEST GIVEN UNDER EVALUATIVE CONDITIONS

(Fall, 1964)

		DA	SATV	SAT Total	Criteria Test Score
SH	Men	-.179	-.048	.019	.141
	Women	-.246**	.085	.029	.149
DA	Men		-.278**	-.366**	-.341**
	Women		-.147	-.132	-.136
SATV	Men			.864**	.499**
	Women			.811**	.508**
SAT Total	Men				.566**
	Women				.539**

*p < .05 (2 tailed) **p < .01 (2 tailed)

TABLE 17

MEAN CRITERIA TEST SCORES FOR LEVELS OF ABILITY
(Fall, 1964)

	Low SAT Total	Mid SAT Total	High SAT Total	df	F	P
Men	32.95	37.00	40.65	2,96	22.96	.005
Women	31.10	36.95	42.03	2,96	50.41	.005

TABLE 18

MEAN CRITERIA TEST SCORES FOR LEVELS OF EVALUATIVE STRESS
(Fall, 1964)

	Low Evaluative Stress	High Evaluative Stress	df	F	P
Men	34.05	39.68	1,96	36.41	.005
Women	34.63	38.75	1,96	20.03	.005

TABLE 19

MEAN CRITERIA TEST SCORES FOR LEVELS OF DEBILITATING ANXIETY AND STRESS
(Fall, 1964)

		Low Evaluative Stress	High Evaluative Stress	df	F	P
				Main effect		
Men	High DA	33.43	38.50	1,96	3.67	$.05 < p < 10$
				Interaction of anxiety x stress		
	Low DA	34.67	40.87	1,96	.65	N.S.
				Main effect		
Women	High DA	34.93	37.87	1,96	.65	N.S.
				Interaction of anxiety x stress		
	Low DA	34.33	39.63	1,96	1.39	N.S.

TABLE 20

MEAN CRITERIA TEST SCORES FOR THE INTERACTION OF STUDY HABITS AND DEBILITATING ANXIETY
(Fall, 1964)

		Low DA	High DA	df	F	P
Men	High SH	39.33	35.83	1,96	3.40	$.05 < p < .10$
	Low SH	36.43	36.10			
Women	High SH	38.77	35.93	1,96	7.17	.01
	Low SH	35.20	36.87			

TABLE 19

MEAN CRITERIA TEST SCORES FOR LEVELS OF DEBILITATING ANXIETY AND STRESS (Fall, 1964)

		Low Evaluative Stress	High Evaluative Stress	df	F	P
				Main effect		
Men	High DA	33.43	38.50	1,96	3.67	$.05<p\leq 10$
				Interaction of anxiety x stress		
	Low DA	34.67	40.87	1,96	.65	N.S.
				Main effect		
Women	High DA	34.93	37.87	1,96	.65	N.S.
				Interaction of anxiety x stress		
	Low DA	34.33	39.63	1,96	1.39	N.S.

TABLE 20

MEAN CRITERIA TEST SCORES FOR THE INTERACTION OF STUDY HABITS AND DEBILITATING ANXIETY (Fall, 1964)

		Low DA	High DA	df	F	P
Men	High SH	39.33	35.83	1,96	3.40	$.05<p<.10$
	Low SH	36.43	36.10			
Women	High SH	38.77	35.93	1,96	7.17	.01
	Low SH	35.20	36.87			

Discussion

The results obtained from the data analysis proved to be more complex than originally anticipated. For example, it had been predicted that students high in fear of Failure would achieve higher levels of performance under conditions of constraint (imposed by penalties for low achievement) than in conditions where such constraint is absent. In view of the main effect for evaluative stress (Table 18) it would seem that our hypothesis is supported. However, students low in fear of Failure performed significantly lower under the nonevaluative condition, also. The absence of the anticipated interaction between degree of constraint and fear of Failure (Hypotheses IV and V) suggests that the concept of failure avoidance is inadequate to account for the observed outcomes (Tables 18 and 19).

The fact that both high and low debilitating anxiety subjects performed less well under the nonevaluative condition could be explained by situational factors rather than by the arousal of the avoidance motive. It may well be that the instructions used in the nonevaluative condition led to a low degree of ego-involvement for all subjects irrespective of their anxiety level. College examinations are seldom viewed with euphoric anticipation by students. Since the testing situation was heavily loaded with cues associated with the pressures of evaluation (e.g., the test was given in a regular classroom, the performance measure itself closely resembled a typical achievement test, etc.) the instruction that the test papers "would not be graded" may have been an open invitation for mediocre performance since no penalty would be incurred for nonachievement.

Another factor which may have enhanced the conditions main effect is the point in time at which the nonevaluative condition was administered. As mentioned previously, this testing was done in the eleventh week of the semester. In view of the importance of final examinations in determining course grades, it seems reasonable to assure that the quantity and quality of course related activities increases as the semester draws to a close. Thus, the observed increase in Criteria Test scores during the evaluative condition could also be due to learning increments acquired during the last four weeks of the 15-week term. Whether the gain in performance is due to the high degree of constraint, to actual increases in learning, or to a combination of the two, is indeterminate at this point. A more precise research design is needed to disentangle the relative contribution of these two factors. In any case, our hypotheses predicting that subjects varying in level of fear of Failure would be differentially affected by the degree of social constraint are not supported by the data.

It was also predicted that students low in debilitating anxiety would excel students with high debilitating anxiety to the extent that spontaneous learning is an attribute of the task. Although the data is suggestive of a main effect for debilitating anxiety (Table 19), the F-ratios failed to reach the 5 per cent level of significance. On the other hand, the interaction obtained between study habits and debilitating anxiety suggests that the relationship between performance of difficult tasks and anxiety is more complex than originally anticipated. As can be seen in Table 20, students high in debilitating anxiety performed poorly whether or not they differed in study habits. However, study habits did differentiate levels of performance for students low in debilitating anxiety as high study habits-low anxiety students tended to outperform all others. This effect could be accounted for in part by the disruptive effect of anxiety interacting with characteristics of the task.

Problems in the Criteria Test are somewhat unusual in that complex problem solving skills are required by many of the items. For example, certain problems require reading of one or more paragraphs of information before a solution can even be attempted. Since students had no opportunity to study these items prior to testing, successful completion would require adeptness at unpracticed problem solving. Thus, Criteria Test performance would require a component of spontaneous learning. Anxiety is supposed to be most disruptive to performance during early stages of response acquisition; therefore it seems reasonable to conclude that anxiety would disrupt performance on the Criteria Test to the extent that new response acquisition is an attribute of the task. The results appear to support this interpretation as high debilitating anxiety students received lowest scores on the test and did not seem to be helped by level of study habits. On the other hand, low anxiety-low study habits students also performed poorly either because they lack the persistence or the instrumental skills necessary to earn high scores. The observed superiority of low anxiety-high study habits students would seem to be a logical consequence of the absence of task-irrelevant responses (as inferred from their low level of debilitating anxiety) and the presence of task-relevant skills (good study habits) which can be engaged to enhance performance on intellectual achievement tasks (Mandler and Sarason, 1952). Thus, debilitating anxiety and study habits seem to be noncognitive components of intellectual performance.

In order to assess the tenability of our assumption that Criteria Test items are complex and therefore susceptible to the effect of anxiety arousal, Criteria Test data were re-analyzed by using separate sub-scale scores for easy and difficult items. (Complete details for this analysis can be found in Appendix M.) Interaction patterns for debilitating anxiety and study habits for easy items tended to be consistent with those observed for the full scale scores although they failed to reach the 5 per cent level of significance (Tables 21-22). However, results for the difficult items were surprising in that no interaction was observed for males while the interaction for females revealed that low study habits-high debilitating anxiety women unexpectedly performed the best (Tables 21-22). In view of the magnitude of the probability estimates for these interactions, the observed outcomes could well be due to chance. Hence, there appears to be but limited support for our assertion that anxiety and study habits interact with characteristics of the task.

Although assessment of perceived stress indicated that differing levels of pressure and nervousness were experienced under the two conditions, no stress x anxiety interaction was observed contrary to what would be expected on the basis of previous studies (Table 19). However, anticipated effects began to emerge when item difficulty was taken into account, although these effects also failed to reach significance (Table 23). This interaction may have been washed out by the fact that no time limits were imposed under either condition. This being the case, subjects would have had sufficient time to overcome some of the debilitating effects of anxiety arousal.

The main effect observed for ability (Table 15) confirms the potent predictive power of this variable on tasks requiring intellectual aptitude. This was especially true for Criteria Test performance as ability accounted for 22 per cent and 41 per cent of the total variance (men and women respectively). Although the interaction of study habits and debilitating anxiety was statistically significant for women ($p < .01$), this effect accounted for but 3 per cent of the variance.[4] The magnitude of the discrepancy between strengths of association for these variables reinforces the need for including ability level as a control whenever the dependent variable loads heavily on the ability factor. In this way effects due to biased sampling procedures can be avoided.

TABLE 21

MEAN SCORES FOR THE INTERACTION OF DEBILITATING ANXIETY AND STUDY HABITS FOR EASY AND DIFFICULT CRITERIA TEST ITEMS, MEN IN PSYCHOLOGY (Fall, 1964)

		Low SH	High SH	df	F	P
Easy Items	High DA	7.70	7.50	1,96	2.17	$.10 < p < .20$
	Low DA	7.70	8.20			
Difficult Items	High DA	4.53	4.73	1,96	.00	N.S.
	Low DA	4.63	4.93			

---

[4] The strengths of association reported here are based on "estimated omega^2" (Hays, 1963). In order to use this technique, it was assumed that the samples were representative of the populations from which they were drawn.

TABLE 22

MEAN SCORES FOR THE INTERACTION OF DEBILITATING ANXIETY AND STUDY HABITS FOR EASY AND DIFFICULT CRITERIA TEST ITEMS, WOMEN IN PSYCHOLOGY (Fall, 1964)

		Low SH	High SH	df	F	P
Easy Items	High DA	7.96	7.80	1,96	3.46	.05<p<.10
	Low DA	7.37	8.13			
Difficult Items	High DA	4.97	4.33	1,96	2.29	.10<p<.20
	Low DA	4.50	4.73			

TABLE 23

MEAN SCORES FOR THE INTERACTION OF DEBILITATING ANXIETY AND EVALUATIVE STRESS FOR DIFFICULT CRITERIA TEST ITEMS, MEN AND WOMEN IN PSYCHOLOGY (Fall, 1964)

		Low Evaluative Stress	High Evaluative Stress	df	F	P
Men in Psychology	High DA	4.43	4.87	1,96	1.22	N.S.
	Low DA	4.33	5.40			
Women in Psychology	High DA	4.43	4.87	1,96	2.65	.11
	Low DA	3.93	5.30			

Summary

The purpose of this study was to investigate relationships between fear of Failure (as inferred from achievement anxiety), degree of constraint, and level of stress. Students in an introductory psychology course were subjected to the following conditions: (a) a nonevaluative, low stress condition; (b) a high stress condition where their performance would actually be graded. The dependent variable was score on the Introductory Psychology Criteria Test.

Statistically significant results were obtained for the following variables.

1. A main effect for ability with high ability being associated with high performance.
2. A main effect for degree of constraint. Students earned higher Criteria Test scores when they knew they were going to be graded. However, subjects in the evaluative condition had the benefit of four weeks of additional exposure to the course content.
3. An interaction between study habits and debilitating anxiety. Highly anxious students achieved low levels of performance irrespective of study habits. Low anxiety-low study habits students performed similarly to highly anxious subjects. Students with high study habits and low anxiety achieved highest levels of performance.

The results were interpreted as failing to support predictions derived from properties of the motive, fear of Failure. The interaction between study habits and anxiety was discussed in terms of the characteristics of the achievement task.

Bibliography

Atkinson, J. W. The achievement motive and recall of interrupted and completed tasks. *Journal of Experimental Psychology*, 1953, 46, 381-390.

Atkinson, J. W. Motivational determinants of risk-taking behavior. *Psychological Review*, 1957, 63, 359-372.

Atkinson, J. W. (Ed.). *Motives in Fantasy, Action, and Society*. New York: Van Nostrand, 1958.

Atkinson, J. W. and Litwin, G. H. Achievement motive and test anxiety conceived as motive to approach success and motive to avoid failure. *Journal of Abnormal and Social Psychology*, 1960, 60, 52-63.

Atkinson, J. W. and Reitman, W. R. Performance as a function of motive strength and expectancy of goal attainment. *Journal of Abnormal and Social Psychology*, 1956, 53, 361-366.

Beam, J. C. Serial learning and conditioning under real-life stress. *Journal of Abnormal and Social Psychology*, 1955, 51, 543-551.

Bloom, B. S. (Ed.). *Taxonomy of Educational Objectives*, *Handbook I*: *Cognitive Domain*. New York: Longmans, Green, 1956.

Brown, W. F. and Holtzman, W. H. A study-attitude questionnaire for predicting academic success. *Journal of Educational Psychology*, 1955, 46, 75-84.

Carney, R. E. An analysis of university student behavior with measures of ability, attitude, performance, and personality. Unpublished doctoral dissertation, University of Michigan, 1961.

Carrier, Neil A. Stress, personality, and performance on course examinations. Unpublished doctoral dissertation, University of Michigan, 1956.

Child, I. L. Personality. *Annual Review of Psychology*. 1954, 5, 149-170.

Deese, J., Lazarus, R. S., and Keenan, J. Anxiety, anxiety reduction, and stress in learning. *Journal of Experimental Psychology*, 1953, 46, 55-60.

Dixon, W. J. and Massey, F. J. *Introduction to Statistical Analysis* (2nd ed.). New York: McGraw-Hill, 1957.

Dollard, J. and Miller, N. E. *Personality and Psychotherapy*. New York: McGraw-Hill, 1950.

Eriksen, C. W. and Paul, G. L. Effects of test anxiety on "real-life" examinations. *Journal of Personality,* 1964, 32, 480-494.

Farber, I. E. and Spence, K. W. Complex learning and conditioning as a function of anxiety. *Journal of Experimental Psychology,* 1953, 45, 2, 120-125.

Farber, I. E. and Spence, K. W. Effects of anxiety, stress and task variables and reaction time. *Journal of Personality,* 1956, 35, 1-18.

Flanders, N. A. Teacher-pupil contacts and mental hygiene. *Journal of Social Issues,* 15, 1, 1959, 30-38.

Flanders, N. A. *Teacher Influence, Pupil Attitudes, and Achievement.* Cooperative Research Monograph No. 12. Washington: U.S. Gov't Printing Office, 1965.

French, J. W. A study of emotional states aroused during examinations. Princeton, N.J.: Educational Testing Service Research Bulletin R B-61-6, March, 1961.

Freud, S. *The Problem of Anxiety.* New York: Norton, 1936.

Gordon, E. M. and Sarason, S. B. The relationship between test anxiety and other anxieties. *Journal of Personality,* 1955, 23, 317-323.

Grice, G. R. Discrimination reaction time as a function of anxiety and intelligence. *Journal of Abnormal and Social Psychology,* 1955, 50, 71-74.

Haber, R. N. and Alpert, R. Anxiety in academic achievement situations. *Journal of Abnormal and Social Psychology,* 1960, 61, 207-215.

Hays, W. L. *Statistics for Psychologists.* New York: Holt, Rinehart, and Winston, 1963.

Kagan, J., Sontag, L. W., Baker, C. T., and Nelson, V. L. Personality and I. Q. Change. *Journal of Abnormal and Social Psychology,* 1958, 56, 261-266.

Klugh, H. E. and Bendig, A. W. The manifest anxiety and ACE scales and college achievement. *Journal of Consulting Psychology,* 1955, 19, 487.

Lazarus, R. and Eriksen, C. W. Effects of failure stress upon skilled performance. *Journal of Experimental Psychology,* 1952, 43, 100-105.

Lin, Y. G. Student characteristics related to achievement (main effects). In *Research on the Characteristics of Effective College Teaching.* Final report of Cooperative Research Project No. OE 850, Ann Arbor, Michigan, 1964.

Lindquist, E. F. Design and Analysis of Experiments in Psychology and Education. Boston: Houghton Mifflin, 1953.

McClelland, D. C., Atkinson, J. W., Clark, R. A., and Lowell, E. L. The Achievement Motive. New York: Appleton-Century-Crofts, 1953.

McKeachie, W. J. Motivation, teaching methods, and college learning. Nebraska Symposium on Motivation. Lincoln: University of Nebraska Press, 1961.

McKeachie, W. J. Research on teaching at the college and university level. In Gage, N. L. (Ed.), Handbook of Research on Teaching. Chicago: Rand McNally, 1963.

McKeachie, W. J., Pollie, D., and Speisman, J. Relieving anxiety in classroom examinations. Journal of Abnormal and Social Psychology, 1955, 50, 93-98.

Maltzman, I., Fox, J., and Morrisett, L. Some effects of manifest anxiety on mental set. Journal of Experimental Psychology, 1953, 46, 50-54.

Mandler, G. and Sarason, S. B. A study of anxiety and learning. Journal of Abnormal and Social Psychology, 1953, 47, 166-173.

Milholland, J. E. Measuring cognitive abilities. In Research on the Characteristics of Effective College Teaching. Final Report of Cooperative Research Project No. OE 850, Ann Arbor, Michigan, 1964.

Moldowsky, S. and Moldowsky, P. C. Digit span as an anxiety indicator. Journal of Consulting Psychology, 1952, 2, 115-118.

Montague, E. K. The role of anxiety on serial rote learning. Journal of Experimental Psychology, 1953, 45, 91-95.

Montague, E. K. and Schneider, L. An empirical study of the effect of anxiety on the learning and retention of nonsense syllables. Unpublished study, University of Iowa, 1949.

O'Conner, P. A. The representation of the motive to avoid failure in thematic apperception. Unpublished doctoral dissertation, University of Michigan, 1959.

Ramond, C. K. Anxiety and task as determiners of verbal performance. Journal of Experimental Psychology, 1953, 46, 2, 120-124.

Sarason, I. G. Effect of anxiety and two kinds of motivating instructions on verbal learning. Journal of Abnormal and Social Psychology, 1957, 54, 166-171.

Sarason, I. G. Test anxiety and the intellectual performance of college students. Journal of Educational Psychology, 1961, 52, 201-206.

Sarason, I. G. Test anxiety and intellectual performance. Journal of Abnormal and Social Psychology, 1963, 66, 73-75.

Sarason, I. G. Test anxiety, general anxiety, and intellectual performance. Journal of Consulting Psychology, 1957, 21, 485-490.

Sarason, S. B. and Mandler, G. Some correlates of test anxiety. Journal of Abnormal and Social Psychology, 1953, 47, 728-731.

Sarason, S. B., Mandler, G., and Craighill, P. C. The effect of differential instructions on anxiety and learning. Journal of Abnormal and Social Psychology, 1952, 47, 561-565.

Sarason, I. G. and Palola, E. The relationship of test and general anxiety, difficulty of task, and experimental instructions to performance. Journal of Experimental Psychology, 1960, 59, 185-191.

Siegel, S. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill, 1956.

Sinick, D. Two anxiety scales correlated and examined for sex differences. Journal of Clinical Psychology, 1956, 12, 394-395.

Smith, D. E. P., Wood, R. L., Downer, J. W., and Raygor, A. L. Reading improvement as a function of student personality and teaching method. Journal of Educational Psychology, 1956, 47, 47-59.

Spence, K. W. A theory of emotionally based drive (D) and its relation to performance in simple learning situations. American Psychologist, 1958, 13, 131-141.

Sperber, Z. Test anxiety and performance under stress. Journal of Consulting Psychology, 1961, 25, 3, 226-233.

Spielberger, C. D. On the relationship between manifest anxiety and intelligence. Journal of Consulting Psychology, 1958, 22, 220-224.

Spielberger, C. D. and Katzenmeyer, W. G. Manifest anxiety, intelligence, and college grades. Journal of Consulting Psychology, 1959, 23, 278.

Stakenas, R. G. An investigation of interactions between student anxiety and teacher produced anxiety cues. Unpublished paper, University of Michigan, 1964.

Taylor, J. A. The relationship of anxiety to the conditioned eyelid response. Journal of Experimental Psychology, 1951, 41, 81-92.

Taylor, J. A. A personality scale of manifest anxiety. Journal of Abnormal and Social Psychology, 1953, 48, 285-290.

Taylor, J. A. and Spence, K. W. The relationship of anxiety level to performance in serial learning. Journal of Experimental Psychology, 1952, 44, 2, 61-64.

Tyler, Leona. The Psychology of Human Differences (2nd ed.). New York: Appleton-Century-Crofts, 1956.

Wallen, N. E. and Travers, R. M. Analysis and investigation of teaching methods. In Gage, N. L. (Ed.), Handbook of Research on Teaching. Chicago: Rand, McNally, 1963.

Westrope, M. R. Relations among Rorschach indices, manifest anxiety, and performance under stress. Journal of Abnormal and Social Psychology, 1953, 48, 4, 515-524.

APPENDIX D

EVALUATIVE STRESS ITEMS AND THE SUBJECTIVE REPORT QUESTIONNAIRE

Research Project on Effective College Teaching

Student Rating Form

As you know, this semester there is a large-scale research effort devoted to understanding student-teacher interaction in the classroom. You may recall having taken a pre-test on Study Habits and Test Taking Attitudes some weeks ago. We would like to consider your ratings in relation to the information obtained from the pre-test. To do this, students will need to identify themselves. Therefore, please indicate your name, student I.D. number, etc., in the spaces provided at the bottom of this page.

Turn in your completed form to the student proctor who has been assigned to collect and deliver these forms directly to the research project office, 6622 Haven Hall. Instructors will have the opportunity to study these ratings only after this face sheet has been removed to preserve your anonymity, and all final grades have been turned in to the registrar's office.

- -

(Identifying information must be detached from this form before it can be released for inspection.)

Course______________________________

Instructor's Name______________________________

Section Number____________________

Your Student I.D. No._ _ _ _ _ _ _ _ _

Your Name__________________________________

Directions: Circle the one alternative which reflects your feelings most accurately. Be sure to write comments where requested.

1. How often did the instructor warn the class to expect unannounced quizzes?

    1. Very often
    2. Often
    3. Occasionally
    4. Seldom
    5. Almost never

2. Unannounced quizzes were given in this class.

    1. Four or more times
    2. Three times
    3. Two times
    4. One time
    5. At no time

3. The teacher strongly emphasized grades.

    1. Very often
    2. Quite often
    3. Sometimes
    4. Hardly ever
    5. Almost never

4. Most students in this class competed for grades.

    1. Hardly at all
    2. Seldom
    3. Occasionally
    4. Often
    5. Most of the time

5. The teacher made it clear that he was continually judging the worth of a student's performance in class.

    1. This almost always occurred
    2. This often occurred
    3. This occasionally occurred
    4. This seldom occurred
    5. This almost never occurred

6. If you had your choice of activities to be graded on, which one would you most prefer? least prefer?

Most prefer	Least prefer
1. Essay test in class	1. Essay test in class
2. Multiple-choice test	2. Multiple-choice test
3. Take-home essay test	3. Take-home essay test
4. Term paper	4. Term paper

In a sentence or two, indicate why you feel this way.

7. In general, I found myself studying

   1. very little in this course
   2. less than an average amount
   3. an average amount in this course
   4. more than an average amount
   5. very hard in this course

   What factors do you think account for the amount of studying you did in this course? (Write a sentence or two)

8. In preparing for exams and quizzes for this course, I studied

   1. More than for my other courses
   2. About as much as for my other courses
   3. Less than for my other courses

9. I found this course to be

   1. difficult
   2. somewhat on the difficult side
   3. of average difficulty
   4. on the easy side
   5. very easy

   What are some of the factors that seem to make you feel this way?

10. As far as reading assignments for this course were concerned I found myself:

    1. trying to catch up with them at the last moment
    2. barely keeping up with them
    3. keeping up but with little time for review
    4. keeping up with some time for review
    5. keeping up with them on a regular basis with plenty of time for review

11. By the way the instructor ran the class, he made me feel

    1. very anxious and uncomfortable in class
    2. quite anxious and uncomfortable
    3. an average amount of anxiousness
    4. quite comfortable
    5. very comfortable in class

    In your own words, what did he do that made you feel this way?

12. The marking in this course was generally

    1. too lenient
    2. on the lenient side
    3. about right
    4. on the hard side
    5. too hard

13. The instructor's marking in this course was

    1. very fair and just
    2. fair enough
    3. arbitrary and unfair on at least one occasion
    4. arbitrary and unfair to students on several occasions

14. In this class, I felt under

    1. little, if any pressure
    2. some pressure
    3. an average amount of pressure
    4. more than an average amount of pressure
    5. a great deal of pressure

15. Would you want to take another course from this instructor?

    1. I certainly would
    2. I would not mind
    3. I would prefer not to
    4. I would refuse to

    Why do you feel this way?

16. The tests in this course were

    1. too easy
    2. on the easy side
    3. about average difficulty
    4. on the difficult side
    5. too hard

17. When this teacher came to class, in general he appeared to be

    1. poorly prepared
    2. quite poorly prepared
    3. somewhat prepared
    4. fairly well prepared
    5. well prepared

    How did his level of preparedness make you feel?

18. The tests in this course were

    1. too many
    2. about right in number
    3. too few

19. To what extent do you believe that good grades in all your college courses will help you do well in your chosen career?

    1. be a great help
    2. be of some help
    3. be of very little help
    4. practically irrelevant

20. To what extent do you think your college grades will be used as a basis for your selection into a career? (Select one)

    1. College grades will be very important to my selection
    2. College grades will be important to my selection
    3. College grades will matter to some extent
    4. College grades will be almost immaterial to my selection

21. To what extent do you believe getting a good grade in the introductory psychology course will help you to do well in your chosen career?

    1. be a great help
    2. be of some help
    3. be of very little help
    4. practically irrelevant

APPENDIX E

FREQUENCY OF EVALUATION QUESTIONNAIRE

Instructor: ______________________________

Section No: __________, Course: ____________________

The purpose of this questionnaire is to determine the kind and frequency of activities which were used by you in evaluating your students. The need for this information arises from the goal of this study which is to examine relationships between frequency of evaluative cues and level of fear of Failure on the part of the student. It seems clear that tests and other graded assignments, e.g., term papers, are very salient evaluative cues for students. Therefore, the frequency of these activities may be a very important determinant of student motivation to achieve academically.

This questionnaire requires only 4-5 minutes to complete. Simply circle the alternative which seems most appropriate for your class. If no alternative seems appropriate, feel free to write in comments which are more descriptive of what you did in evaluating your students.

In the blank spaces record the approximate percentage that the designated activity counted in the final grade.

If you taught more than one section but used the same evaluational procedure in both sections, you need fill out only one form.

---

1. Does your department require departmental hour exams for all sections in the introductory course?

    1. Yes
    2. No

2. How many hour exams were there in this class?

My own hour exams	Departmental hour exams
1. None	1. None
2. One	2. One
3. Two	3. Two
4. Three	4. Three
5. Four or more	5. Four or more

3. Scores on all hour exams counted approximately ________ per cent of the final grade.

4. In addition to hour exams, how many quizzes did you require?

    1. None
    2. One
    3. Two
    4. Three
    5. Four or more

5. Scores on quizzes counted approximately ________ per cent of the final grade.

6. Was a term paper(s) required?

    1. Yes
    2. No
    3. Optional. Students could choose to write one.

7. Score on the term paper(s) counted approximately ________ per cent of the final grade.

8. How often were students required to hand in written assignments other than term papers?

Assignments handed in but not graded	Assignments handed in and graded
1. None required	1. None required
2. About once a month	2. About once a month
3. About twice a month	3. About twice a month
4. Once a week	4. Once a week
5. More often than once a week.	5. More often than once a week.

9. Hand-in assignments which were graded counted approximately ________ per cent of the final grade.

10. Does your department require a departmental final exam for all sections in the introductory course?

    1. Yes
    2. No

11. Score on the final exam counted approximately ________ per cent of the final grade.

12. How many sections of the introductory course did you teach?

1. One section 2. Two sections

13. If you taught 2 sections, did you use the same evaluational procedure in both?

1. Yes
2. No

14. Please return this completed form to:

Bob Stakenas
Psychology Department
6620 Haven Hall
Via Campus Mail

Thank you again for your cooperation.

Any comments you might have:

APPENDIX G

CODING CATEGORIES FOR OPEN-ENDED RESPONSES ON THE SUBJECTIVE REPORT QUESTIONNAIRE

Codes for Item (1 in Economics; 7 in the Psychology Form)

Free response given to the question: "What factor accounts for the amount of studying that you did in this course?"

Area	Code	Description
Teacher	0[a]	Teaching willing to help; a good teacher; interesting teacher, etc.
	1	Teacher was demanding; assigned lots of readings, many papers, assignments, etc.
	2	Teacher was not demanding; class discussion and lecture were sufficient to keep up, etc.
Content	3	Concepts in the course were difficult to understand, etc.
	4	Concepts in the course were easy; common-sense; had a previous course in it, etc.
Student	5	I liked the subject; it was interesting; stimulating, etc.
	6	I didn't like the subject; I was not interested in it; the course was not very stimulating.
Misc.	7	Irrelevant responses; I wanted to get a good grade, etc.
	8	No response given.

[a] There is no scale implied by these numbers. Each category is considered discrete.

Decision rules: Whenever there is more than one response, score the first one appearing that is relevant.

Check for a rational relationship between amount of work put in and the reason given (assignments which result in an average amount of studying, code as 7).

Codes for Item (3 in Economics; 9 in the Psychology Form)

Free response given to the question: "What are some of the factors that seem to make you feel . . . . (that the course was easy/difficult)?"

Area	Code	Description
Teacher	0[a]	The teacher explained things clearly; he made the course interesting, etc.
	1	Teacher was demanding; he required many readings; grading was hard, etc.
	2	Teacher was not demanding; not much work expected; an easy grader; tests were easy, etc.
Content	3	Concepts in the course were difficult to understand; there were many new concepts; concepts were ambiguous, etc.
	4	Concepts were easy; only required memorization; concepts were common-sense, etc.
Student	5	I liked the subject; it was interesting; stimulating, etc.
	6	I didn't like the subject; I was apathetic, etc.
Misc.	7	Irrelevant responses; I did poorly on tests, etc.
	8	No response given.

[a] There is no scale implied by these numbers. Each category is considered discrete.

Decision rules: Whenever there is more than one response, score the first one appearing that is relevant.

Check for a rational relationship between amount of work put in and the reason given (assignments which result in an average amount of studying, code as 7).

If item 9 is marked "easy" and called a memory course, code as a 2.

Codes for Item (5 in Economics; 11 in the Psychology Form)

Free response given to the question: "What are some of the factors . . . (that made you feel anxious/comfortable)?"

Area	Code	Description
Presentation	0[a]	Clear; knew what he was doing; taught well, etc.
	1	Poor; bad teacher, etc.
Interpersonal Relations	2	Interested in student; humorous; informal; understanding; not-threatening; friendly; permissive; never belittled students; good eye contact, etc.
	3	Critical; looked down on student; threatening; conflicted with students attitudes, etc.
Teacher Expectations	4	Was demanding; emphasized grades, etc.
	5	Undemanding; did not expect much from student, etc.
Misc.	7	Irrelevant
	8	No response

[a] There is no scale implied by these numbers. Each category is considered discrete.

Discision rules: Whenever there is more than one response, score the first one appearing that is relevant.

Check for a rational relationship between level of comfort/anxiety and the reason given.

APPENDIX H

DISTRIBUTION CHARACTERISTICS OF VARIABLES FOR THE SURVEY AND EXPERIMENTAL STUDIES

TABLE 25

MEANS AND STANDARD DEVIATIONS FOR MEASURES OF ABILITY,
STUDY HABITS, DEBILITATING ANXIETY, AND GRADES
FOR 370 MEN AND 577 WOMEN IN
INTRODUCTORY PSYCHOLOGY,
THE SURVEY STUDY
(Fall, 1964)

Variable		Mean	Standard Deviation
SATV	Men	543.51	91.28
	Women	551.47	77.85
SH	Men	17.45	5.79
	Women	20.48	5.75
DA	Men	27.09	5.59
	Women	27.88	5.75
Grades	Men	2.77	.91
	Women	2.79	.85

TABLE 26

MEANS AND STANDARD DEVIATIONS FOR MEASURES OF ABILITY, STUDY HABITS, DEBILITATING ANXIETY, AND GRADES FOR 388 MEN AND 149 WOMEN IN INTRODUCTORY ECONOMICS, THE SURVEY STUDY

(Fall, 1964)

Variable		Mean	Standard Deviation
SATV	Men	562.96	90.48
	Women	572.21	91.00
SH	Men	18.20	5.64
	Women	20.99	5.77
DA	Men	26.97	5.50
	Women	27.04	5.62
Grades	Men	2.67	.82
	Women	2.75	.77

TABLE 27

MEANS AND STANDARD DEVIATIONS FOR MEASURES OF ABILITY, STUDY HABITS, DEBILITATING ANXIETY, AND CRITERIA TEST SCORES FOR MEN, THE EXPERIMENTAL STUDY

(Fall, 1964)

Variable	Condition	N	Mean	Standard Deviation
SAT Total	Evaluative	96	1139.00	151.30
	Non-Eval.	101	1172.10	169.30
SH	Evaluative	96	16.76	5.83
	Non-Eval.	101	18.15	5.67
DA	Evaluative	96	28.04	4.90
	Non-Eval.	101	25.88	5.06
Criteria Test Score	Evaluative	96	39.14	6.05
	Non-Eval.	101	35.02	7.02

TABLE 28

MEANS AND STANDARD DEVIATIONS FOR MEASURES OF ABILITY, STUDY HABITS, DEBILITATING ANXIETY, AND CRITERIA TEST SCORES FOR WOMEN, THE EXPERIMENTAL STUDY
(Fall, 1964)

Variable	Condition	N	Mean	Standard Deviation
SAT Total	Evaluative	99	1111.60	133.80
	Non-Eval.	108	1124.80	165.10
SH	Evaluative	99	21.16	5.12
	Non-Eval.	108	19.32	6.47
DA	Evaluative	99	27.50	5.15
	Non-Eval.	108	27.88	5.72
Criteria Test Score	Evaluative	99	39.33	6.22
	Non-Eval.	108	34.28	6.59

APPENDIX I

RELIABILITY COEFFICIENTS FOR THE STUDENT MEASURES

TABLE 29

RELIABILITY COEFFICIENTS FOR ABILITY, STUDY HABITS, DEBILITATING ANXIETY, AND THE CRITERIA TEST

Variable	Reliability	Method
SATV[a]	.90	Internal Consistency
SATM[a]	.88	Internal Consistency
SH[b]	.72	Test-retest
DA[b]	.79	Test-retest
Criteria Test[c]	.69	Parallel Forms

[a] Reported in College Board Score Reports (Princeton: College Entrance Examination Board, 1964).

[b] These coefficients were derived from data obtained for this study. Time between the test and retest varied from two to six weeks (N = 159).

[c] Reported by Milholland (1964).

APPENDIX J

SCALE SCORES FOR LEVELS OF THE TREATMENTS BY LEVELS DESIGN

TABLE 30

SCALE SCORES FOR LEVELS OF ABILITY, DEBILITATING ANXIETY, AND STUDY HABITS FOR MEN IN PSYCHOLOGY AND ECONOMICS, THE SURVEY STUDY
(Fall, 1964)

SATV Level	Score Range	DA Level	Score Range	SH Level	Score Range
High SATV	590-800	High DA	28-37	High SH	20-26
				Low SH	07-19
		Low DA	12-22	High SH	20-26
				Low SH	07-19
Mid SATV	510-589	High DA	28-37	High SH	20-33
				Low SH	06-19
		Low DA	15-23	High SH	20-33
				Low SH	06-19
Low SATV	200-509	High DA	32-40	High SH	19-33
				Low SH	11-18
		Low DA	21-27	High SH	19-33
				Low SH	11-18

TABLE 31

SCALE SCORES FOR LEVELS OF ABILITY, DEBILITATING ANXIETY, AND STUDY HABITS FOR WOMEN IN PSYCHOLOGY, THE SURVEY STUDY
(Fall, 1964)

SATV Level	Score Range	DA Level	Score Range	SH Level	Score Range
High SATV	590-800	High DA	29-43	High SH	19-31
				Low SH	05-18
		Low DA	11-23	High SH	20-26
				Low SH	07-19
Mid SATV	520-589	High DA	31-41	High SH	21-33
				Low SH	11-20
		Low DA	15-24	High SH	21-33
				Low SH	11-20
Low SATV	200-519	High DA	33-40	High SH	20-31
				Low SH	09-19
		Low DA	17-27	High SH	20-31
				Low SH	09-19

TABLE 32

SCALE SCORES FOR LEVELS OF ABILITY, DEBILITATING ANXIETY, AND STUDY HABITS FOR MEN IN PSYCHOLOGY, AND EXPERIMENTAL STUDY

(Fall, 1964)

SAT Total Level	Score Range	DA Level	Score Range	SH Level	Score Range
High SAT Total	1240-1530	High DA	27-34	High SH	15-32
				Low SH	06-14
		Low DA	12-24	High SH	15-32
				Low SH	06-14
Mid SAT Total	1110-1239	High DA	28-44	High SH	19-29
				Low SH	08-18
		Low DA	19-25	High SH	19-27
				Low SH	11-18
Low SAT Total	660-1109	High DA	31-37	High SH	19-27
				Low SH	11-18
		Low DA	18-26	High SH	19-27
				Low SH	11-18

TABLE 33

SCALE SCORES FOR LEVELS OF ABILITY, DEBILITATING ANXIETY, AND STUDY HABITS FOR WOMEN IN PSYCHOLOGY, THE EXPERIMENTAL STUDY (Fall, 1964)

SAT Total Level	Score Range	DA Level	Score Range	SH Level	Score Range
High SAT Total	1180-1450	High DA	29-43	High SH	18-33
				Low SH	06-17
		Low DA	14-25	High SH	18-33
				Low SH	06-17
Mid SAT Total	1060-1179	High DA	29-40	High SH	22-33
				Low SH	10-21
		Low DA	18-24	High SH	22-33
				Low SH	10-21
Low SAT Total	780-1059	High DA	31-41	High SH	18-28
				Low SH	05-17
		Low DA	16-26	High SH	18-28
				Low SH	05-17

APPENDIX K

THE COMPLETE ANALYSIS OF VARIANCE FOR THE SURVEY STUDY

TABLE 34

ANALYSIS OF VARIANCE FOR ITEM THREE[a]
MEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1874.47	2	937.23	9.31	.005
SH (B)	80.03	1	80.03	--	--
DA (C)	288.30	1	288.30	2.86	.05<p<.10
ES3 (D)	50.70	1	50.70	--	--
A x B	205.27	2	102.63	--	--
A x C	194.60	2	97.30	--	--
A x D	67.40	2	33.70	--	--
B x C	4.03	1	4.03	--	--
B x D	.83	1	.83	--	--
C x D	4.03	1	4.03	--	--
A x B x C	24.07	2	12.03	--	--
A x B x D	195.47	2	97.73	--	--
A x C x D	125.07	2	62.53	--	--
B x C x D	140.83	1	140.83	--	--
A x B x C x D	.47	2	.23	--	--
Within Cells	9662.80	96	100.65		
Total	12918.37	119			

---

[a] The teacher strongly emphasized grades.

TABLE 35

ANALYSIS OF VARIANCE FOR ITEM FOUR[a] MEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1032.27	2	516.13	5.47	.01
SH (B)	202.80	1	202.80	--	--
DA (C)	790.53	1	790.53	8.38	.005
ES4 (D)	4.80	1	4.80	--	--
A x B	31.20	2	15.60	--	--
A x C	460.87	2	230.43	--	--
A x D	99.80	2	49.90	--	--
B x C	172.80	1	172.80	--	--
B x D	360.53	1	360.53	3.82	N.S.*
C x D	22.53	1	22.53	--	--
A x B x C	108.20	2	54.10	--	--
A x B x D	108.07	2	54.03	--	--
A x C x D	2.87	2	1.43	--	--
B x C x D	58.80	1	58.80	--	--
A x B x C x D	281.40	2	140.70	--	--
Within Cells	9056.40	96	94.34		
Total	12793.87	119			

[a] Most students in class competed for grades.

*Although an F-ratio of 3.82 (1,96 df) has an associated probability level of .06, this effect was called nonsignificant. In view of the large number of nonindependent tests carried out, and lack of theoretical expectancies, it was concluded that this interaction was due to errors generated by sampling rather than to any underlying psychological phenomena.

TABLE 36

ANALYSIS OF VARIANCE FOR ITEM FIVE[a]
MEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	670.05	2	335.02	3.59	.05
SH (B)	616.53	1	616.53	6.60	.025
DA (C)	381.63	1	381.63	4.09	.05
ES5 (D)	7.50	1	7.50	--	--
A x B	143.12	2	71.56	--	--
A x C	91.02	2	45.51	--	--
A x D	66.15	2	33.08	--	--
B x C	16.13	1	16.13	--	--
B x D	53.33	1	53.33	--	--
C x D	24.30	1	24.30	--	--
A x B x C	218.82	2	109.41	--	--
A x B x D	52.02	2	26.01	--	--
A x C x D	132.65	2	66.32	--	--
B x C x D	213.33	1	213.33	--	--
A x B x C x D	77.12	2	38.56	--	--
Within Cells	8961.60	96	93.35		
Total	11725.30	119			

---

[a] The teacher made it clear that he was continually judging the worth of a student's performance in class.

TABLE 37

ANALYSIS OF VARIANCE FOR FREQUENCY OF TEACHER ASSIGNED TESTS MEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1835.82	2	917.91	10.10	.005
SH (B)	374.53	1	374.53	4.12	.05
DA (C)	440.83	1	440.83	4.85	.05
TESTS (D)	.00	1	.00	--	--
A x B	54.72	2	27.36	--	--
A x C	654.12	2	327.06	3.60	N.S.*
A x D	7.85	2	3.92	--	--
B x C	22.53	1	22.53	--	--
B x D	4.03	1	4.03	--	--
C x D	224.13	1	224.13	--	--
A x B x C	82.02	2	41.01	--	--
A x B x D	116.22	2	58.11	--	--
A x C x D	126.02	2	63.01	--	--
B x C x D	28.03	1	28.03	--	--
A x B x C x D	186.32	2	93.16	--	--
Within Cells	8726.80	96	90.90		
Total	12883.97	119			

*Although an F-ratio of 3.60 (2,96 df) has an associated probability level of .05, this effect was called nonsignificant. In view of the large number of nonindependent tests carried out, and lack of theoretical expectancies, it was concluded that this interaction effect was due to errors generated by sampling rather than to any underlying psychological phenomena.

TABLE 38

ANALYSIS OF VARIANCE FOR ITEM THREE[a]
MEN IN ECONOMICS
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	17.45	2	8.72	11.18	.005
SH (B)	3.67	1	3.67	4.71	.05
DA (C)	.01	1	.01	--	--
ES3 (D)	.07	1	.07	--	--
A x B	.65	2	.33	--	--
A x C	.12	2	.06	--	--
A x D	1.85	2	.93	--	--
B x C	.01	1	.01	--	--
B x D	2.41	1	2.41	--	--
C x D	.41	1	.41	--	--
A x B x C	2.92	2	1.46	--	--
A x B x D	.32	2	.16	--	--
A x C x D	2.12	2	1.06	--	--
B x C x D	.41	1	.41	--	--
A x B x C x D	.32	2	.16	--	--
Within Cells	75.20	96	.78		
Total	107.93	119			

[a] The teacher strongly emphasized grades.

TABLE 39

ANALYSIS OF VARIANCE FOR ITEM FOUR[a]
MEN IN ECONOMICS
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	16.02	2	8.01	10.01	.005
SH (B)	1.63	1	1.63	--	--
DA (C)	2.70	1	2.70	3.38	$.05<p<.10$
ES4 (D)	.83	1	.83	--	--
A x B	2.72	2	1.36	--	--
A x C	.05	2	.03	--	--
A x D	.22	2	.11	--	--
B x C	.13	1	.13	--	--
B x D	.53	1	.53	--	--
C x D	.53	1	.53	--	--
A x B x C	.22	2	.11	--	--
A x B x D	.52	2	.26	--	--
A x C x D	.12	2	.06	--	--
B x C x D	.83	1	.83	--	--
A x B x C x D	2.02	2	1.01	--	--
Within Cells	76.40	96	.80		
Total	105.47	119			

[a] Most students in class competed for grades.

TABLE 40

ANALYSIS OF VARIANCE FOR ITEM FIVE[a]
MEN IN ECONOMICS
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	16.65	2	8.32	10.67	.005
SH (B)	5.21	1	5.21	6.68	.025
DA (C)	.41	1	.41	--	--
ES5 (D)	.21	1	.21	--	--
A x B	4.72	2	2.36	3.03	.05<p<.10
A x C	.62	2	.31	--	--
A x D	.02	2	.01	--	--
B x C	.67	1	.67	--	--
B x D	.07	1	.07	--	--
C x D	.21	1	.21	--	--
A x B x C	.35	2	.18	--	--
A x B x D	.95	2	.47	--	--
A x C x D	1.12	2	.56	--	--
B x C x D	.01	1	.01	--	--
A x B x C x D	1.32	2	.66	--	--
Within Cells	74.80	96	.78		
Total	107.33	119			

[a] The teacher made it clear that he was continually judging the worth of a student's performance in class.

TABLE 41

ANALYSIS OF VARIANCE FOR FREQUENCY OF TEACHER ASSIGNED TESTS
MEN IN ECONOMICS
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	21.12	2	10.56	13.37	.005
SH (B)	3.01	1	3.01	3.81	$.05<p<.10$
DA (C)	.21	1	.21	--	--
TESTS (D)	.21	1	.21	--	--
A x B	.12	2	.06	--	--
A x C	2.22	2	1.11	--	--
A x D	1.12	2	.56	--	--
B x C	.01	1	.01	--	--
B x D	1.01	1	1.01	--	--
C x D	.67	1	.67	--	--
A x B x C	1.02	2	.51	--	--
A x B x D	4.12	2	2.06	--	--
A x C x D	.35	2	.18	--	--
B x C x D	.67	1	.67	--	--
A x B x C x D	.35	2	.17	--	--
Within Cells	75.60	96	.79		
Total	111.79	119			

TABLE 42

ANALYSIS OF VARIANCE FOR ITEM THREE[a]
WOMEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SATV	(A)	422.47	2	211.23	2.15	N.S.
SH	(B)	151.87	1	151.87	--	--
DA	(C)	7.01	1	7.01	--	--
ES3	(D)	1.01	1	1.01	--	--
A x B		54.60	2	27.30	--	--
A x C		64.07	2	32.03	--	--
A x D		26.47	2	13.23	--	--
B x C		226.87	1	226.87	2.29	N.S.
B x D		37.41	1	37.41	--	--
C x D		170.41	1	170.41	--	--
A x B x C		68.60	2	34.30	--	--
A x B x D		268.87	2	134.43	--	--
A x C x D		283.27	2	141.63	--	--
B x C x D		4.41	1	4.41	--	--
A x B x C x D		16.47	2	8.23	--	--
Within Cells		9409.20	96	98.01		
Total		11212.99	119			

[a] The teacher strongly emphasized grades.

TABLE 43

ANALYSIS OF VARIANCE FOR ITEM FOUR[a]
WOMEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1198.12	2	599.06	7.38	.01
SH (B)	.07	1	.07	--	--
DA (C)	476.01	1	476.01	5.86	.025
ES4 (D)	35.21	1	35.21	--	--
A x B	9.05	2	4.52	--	--
A x C	51.62	2	25.81	--	--
A x D	68.82	2	34.41	--	--
B x C	60.21	1	60.21	--	--
B x D	88.41	1	88.41	--	--
C x D	175.21	1	175.21	--	--
A x B x C	70.82	2	35.41	--	--
A x B x D	177.22	2	88.61	--	--
A x C x D	11.32	2	5.66	--	--
B x C x D	1.87	1	1.87	--	--
A x B x C x D	1.05	2	.52	--	--
Within Cells	7792.80	96	81.18		
Total	10217.79	119			

[a] Most students in class competed for grades.

TABLE 44

ANALYSIS OF VARIANCE FOR ITEM FIVE[a] WOMEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1412.72	2	706.36	7.55	.01
SH (B)	208.03	1	208.03	--	--
DA (C)	9.63	1	9.63	--	--
ES5 (D)	40.83	1	40.83	--	--
A x B	292.82	2	146.41	--	--
A x C	59.82	2	29.91	--	--
A x D	141.82	2	70.91	--	--
B x C	172.80	1	172.80	--	--
B x D	48.13	1	48.13	--	--
C x D	136.53	1	136.53	--	--
A x B x C	25.65	2	12.82	--	--
A x B x D	4.12	2	2.06	--	--
A x C x D	3.72	2	1.86	--	--
B x C x D	168.03	1	168.03	--	--
A x B x C x D	115.22	2	57.61	--	--
Within Cells	8977.60	96	93.52		
Total	11817.47	119			

[a] The teacher made it clear that he was continually judging the worth of a student's performance in class.

TABLE 45

ANALYSIS OF VARIANCE FOR FREQUENCY OF TEACHER ASSIGNED TESTS
WOMEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SATV (A)	1544.62	2	772.31	10.55	.005
SH (B)	170.41	1	170.41	--	--
DA (C)	414.41	1	414.41	5.66	.025
TESTS (D)	14.01	1	14.01	--	--
A x B	303.52	2	151.76	--	--
A x C	82.12	2	41.06	--	--
A x D	47.62	2	23.81	--	--
B x C	8.01	1	8.01	--	--
B x D	95.41	1	95.41	--	--
C x D	29.01	1	29.01	--	--
A x B x C	135.62	2	67.81	--	--
A x B x D	680.12	2	340.06	4.65	N.S.*
A x C x D	32.72	2	16.36	--	--
B x C x D	.08	1	.08	--	--
A x B x C x D	3.95	2	1.97	--	--
Within Cells	7026.40	96	73.19		
Total	10587.99	119			

*Although an F-ratio of 4.65 (2,96 df) has an associated probability level of .025, this effect was called nonsignificant. In view of the large number of nonindependent tests carried out, and lack of theoretical expectancies, it was concluded that this interaction effect was due to errors generated by sampling rather than to any underlying psychological phenomena.

TABLE 46

MEAN GRADE BY LEVEL OF ABILITY FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS (Fall, 1964)

Sample	Item	Low SATV	Mid SATV	High SATV	df	F	P
Men in Psychology	ES3	44.65[a]	50.80	54.20	2,96	9.31	.005
	ES4	46.58	50.80	52.90	2,96	5.47	.01
	ES5	47.88	50.43	53.65	2,96	3.59	.05
	Tests	45.15	50.65	54.68	2,96	10.10	.005
Men in Economics	ES3	1.98[b]	2.55	2.90	2,96	11.18	.005
	ES4	2.08	2.68	2.95	2,96	10.01	.005
	ES5	1.90	2.65	2.73	2,96	10.67	.005
	Tests	1.93	2.50	2.95	2,96	13.37	.005
Women in Psychology	ES3	47.53[a]	48.58	51.93	2,96	2.16	N.S.
	ES4	48.30	48.83	55.25	2,96	7.38	.01
	ES5	47.88	49.43	55.00	2,96	7.55	.01
	Tests	46.20	51.63	54.90	2,96	10.55	.005

[a] Grades in Psychology were converted to standard scores within sections (mean of 50, S.D. of 10).

[b] Means in Economics are based on raw grades (A = 4, B = 3, C = 2, D = 1, E = 0).

TABLE 47

MEAN GRADE BY LEVEL OF STUDY HABITS FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS

(Fall, 1964)

Sample	Item	Low SH	High SH	df	F	P
Men in Psychology	ES3	49.07[a]	50.70	1,96	.80	N.S.
	ES4	48.57	51.62	1,96	2.15	N.S.
	ES5	48.38	52.92	1,96	6.60	.025
	Tests	48.57	51.75	1,96	4.12	.05
Men in Economics	ES3	2.30[b]	2.65	1,96	4.71	.05
	ES4	2.45	2.68	1,96	2.04	N.S.
	ES5	2.22	2.63	1,96	6.68	.025
	Tests	2.33	2.58	1,96	3.81	$.05<p<.10$
Women in Psychology	ES3	48.22[a]	50.47	1,96	1.55	N.S.
	ES4	50.77	50.82	1,96	.00	N.S.
	ES5	49.28	52.25	1,96	2.22	N.S.
	Tests	49.72	52.10	1,96	2.33	N.S.

[a] Grades in Psychology were converted to standard scores within sections (mean of 50, S.D. of 10).

[b] Means in Economics are based on raw grades (A = 4, B = 3, C = 2, D = 1, E = 0).

TABLE 48

MEAN GRADE BY LEVEL OF DEBILITATING ANXIETY FOR STUDENTS IN PSYCHOLOGY AND ECONOMICS

(Fall, 1964)

Sample	Item	Low DA	High DA	df	F	P
Men in Psychology	ES3	51.43[a]	48.33	1,96	2.86	$.05<p<.10$
	ES4	52.05	48.13	1,96	8.38	.005
	ES5	52.43	48.87	1,96	4.09	.05
	Tests	52.25	48.07	1,96	4.85	.05
Men in Economics	ES3	2.48[b]	2.47	1,96	.01	N.S.
	ES4	2.72	2.42	1,96	3.38	$.05<p<.10$
	ES5	2.50	2.35	1,96	.53	N.S.
	Tests	2.50	2.42	1,96	.27	N.S.
Women in Psychology	ES3	49.58[a]	49.10	1,96	.07	N.S.
	ES4	52.78	48.80	1,96	5.86	.025
	ES5	50.73	50.80	1,96	.10	N.S.
	Tests	52.77	49.05	1,96	5.66	.025

[a] Grades in Psychology were converted to standard scores within sections (mean of 50, S.D. of 10).

[b] Means in Economics are based on raw grades (A = 4, B = 3, C = 2, D = 1, E = 0).

APPENDIX L

THE COMPLETE ANALYSIS OF VARIANCE FOR THE EXPERIMENTAL STUDY

TABLE 49

ANALYSIS OF VARIANCE FOR EXPERIMENTAL CONDITIONS MEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation	Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL (A)	1193.52	2	596.76	22.96	.005
SH (B)	46.87	1	46.87	--	--
DA (C)	95.41	1	95.41	3.67	$.05<p<.10$
CONDITIONS (D)	946.41	1	946.41	36.41	$<.005$
A x B	21.05	2	10.53	--	--
A x C	26.52	2	13.26	--	--
A x D	115.02	2	57.51	--	--
B x C	88.41	1	88.41	3.40	$.05<p<.10$
B x D	.01	1	.01	--	--
C x D	16.87	1	16.87	--	--
A x B x C	78.52	2	39.26	--	--
A x B x D	45.02	2	22.51	--	--
A x C x D	38.15	2	19.08	--	--
B x C x D	2.41	1	2.41	--	--
A x B x C x D	59.82	2	29.91	--	--
Within Cells	2494.80	96	25.99		
Total	5268.79	119			

TABLE 50

ANALYSIS OF VARIANCE FOR EXPERIMENTAL CONDITIONS
WOMEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL	(A)	2396.32	2	1198.16	50.41	<.005
SH	(B)	63.07	1	63.07	--	--
DA	(C)	15.41	1	15.41	--	--
CONDITIONS	(D)	476.01	1	476.01	20.03	<.005
A x B		4.55	2	2.28	--	--
A x C		47.62	2	23.81	--	--
A x D		41.82	2	20.91	--	--
B x C		170.41	1	170.41	7.17	.01
B x D		.21	1	.21	--	--
C x D		33.07	1	33.07	--	--
A x B x C		35.12	2	17.56	--	--
A x B x D		31.52	2	15.76	--	--
A x C x D		15.05	2	7.52	--	--
B x C x D		6.07	1	6.07	--	--
A x B x C x D		108.15	2	54.08	--	--
Within Cells		2281.60	96	23.77		
Total		5725.99	119			

APPENDIX M

ANALYSIS OF CRITERIA TEST DATA WITH ITEM DIFFICULTY CONTROLLED

Although a stress x anxiety interaction had been anticipated in the experimental study, results presented in Chapter IV failed to confirm this expectation. Since task complexity has been known to interact with anxiety level, these factors could have combined in such a way so as to mask anticipated effects when total score was used as the basis for analysis. Therefore, Criteria Test data were reanalyzed with control on item difficulty level in order to determine effects for task complexity more precisely.

Procedure

Item difficulty was defined in terms of the percentage of students passing an item. Easy items would be those passed by almost everyone; difficult items would be passed by only a few. Since item difficulties for Form X of the Criteria Test had been determined during standardization of the test (Milholland, 1964), these values were used for item selection for this analysis, also. The 10 items with the highest and 10 items with the lowest per cent passing were chosen. These items are identified in Table 51.

Answer sheets were re-scored and a sub-scale score for each level of difficulty was determined. The data, based on these sub-scores, were analyzed by means of a four-way analysis of variance with control on ability, study habits, debilitating anxiety, and evaluative stress.

TABLE 51

PER CENT PASSING FOR THE TEN EASIEST AND TEN MOST DIFFICULT ITEMS ON THE INTRODUCTORY PSYCHOLOGY CRITERIA TEST, FORM X
(Spring, 1962; N = 64-67)

Easy Items		Difficult Items	
Item Number	Per Cent Passing	Item Number	Per Cent Passing
06.	79	07.	44
10.	89	17.	45
15.	85	18.	29
33.	84	19.	40
34.	83	25.	42
40.	95	29.	38
43.	83	30.	34
44.	87	47.	34
52.	83	55.	41
54.	79	58.	37
Mean	84.7		38.4

Results

Significant main effects were observed for intellectual ability and evaluative stress, and were consistent with results based on full scale scores (Tables 52 and 53). Again, high ability was associated with highest levels of performance irrespective of difficulty level.

TABLE 52

MEAN SCORES BY LEVEL OF ABILITY FOR TEN EASY AND TEN DIFFICULT CRITERIA TEST ITEMS, MEN AND WOMEN IN PSYCHOLOGY
(Fall, 1964)

	Items	Low SAT Total	Mid SAT Total	High SAT Total	df	F	P
Men	Easy	7.25	7.73	8.35	2,96	7.20	.01
	Difficult	4.05	4.90	5.33	2,96	6.85	.01
Women	Easy	7.15	7.75	8.55	2,96	10.44	.005
	Difficult	3.93	4.85	5.13	2,96	6.43	.01

TABLE 53

MEAN SCORES BY CONDITIONS FOR TEN EASY AND TEN DIFFICULT CRITERIA TEST ITEMS, MEN AND WOMEN IN PSYCHOLOGY
(Fall, 1964)

	Items	Nonevaluative	Evaluative	df	F	P
Men	Easy	7.32	8.23	1,96	14.92	.005
	Difficult	4.38	5.13	1,96	6.85	.01
Women	Easy	7.47	8.17	1,96	7.78	.01
	Difficult	4.18	5.08	1,96	9.88	.01

Students also earned higher scores when they were being graded than under the nonevaluative condition.

As can be seen in Tables 52 and 53, there was also a main effect for difficulty level (Men: F = 109.38, p < .005; Women: F = 122.41, p < .005). This outcome is not surprising in view of the criteria used for item selection; these outcomes can be considered as a replication of the standardization group's results.

An interesting interaction between evaluative stress and level of ability emerged (Table 54). Men tended to perform at uniformly high levels on easy items during the evaluative condition irrespective of ability level. However, performance for low and middle ability men tended to fall off under the nonevaluative condition. A similar

TABLE 54

MEAN CRITERIA TEST SCORES FOR THE INTERACTION OF ABILITY AND CONDITIONS, MEN AND WOMEN IN PSYCHOLOGY
(Fall, 1964)

		Low SAT Total	Mid SAT Total	High SAT Total	df	F	P
Men (Easy items)	Evaluative	8.10	8.20	8.40	2,96	3.79	.05
	Nonevaluative	6.40	7.25	8.30			
Women (Difficult items)	Evaluative	4.90	5.10	5.25	2,96	3.42	.05
	Nonevaluative	2.95	4.60	5.00			

interaction was observed for women's performance on the difficult items. How difficulty level enters this interaction is not entirely clear.

Even with level of item difficulty controlled, interactions for anxiety and stress failed to reach significance. These results are described in Tables 21-23 of Chapter IV. Variance estimates, F-ratios, and probability estimates for the complete analysis are given in Tables 55-58 (see pages 157-160).

Discussion

Even with level of task difficulty controlled, the results tend to be highly consistent with those based on scores for the full 60-item Criteria Test. The fact that an ability main effect continues to appear for both easy and difficult items suggests that the Criteria Test is indeed complex and requires high levels of intellectual ability for high performance.

The interaction of ability and evaluative stress is interesting in view of the differential levels of performance attained under the two conditions. When students were being graded, levels of performance were uniformly high although there is still a slight main effect for ability (Table 54). Under the nonevaluative condition, levels of performance become much more disparate for middle and low ability students while high ability students performed almost equally well irrespective of evaluative stress. This outcome suggests that the middle and low ability students are prone to be satisfied with mediocre performance when penalties for nonachievement are not present. On the other hand, high ability students seem to be more intrinsically motivated as their performance tended to be relatively similar under both conditions. It may well be that test performance is viewed as stimulating and challenging by high ability students and as an opportunity to exercise their mental powers. On the other hand, low ability students would find themselves under constant pressure to maintain satisfactory levels of performance due to their limited potential and would be more apt to be task avoidant in order to escape the feeling of pressure whenever the opportunity arises, as it did here under the nonevaluative condition. Why this interaction effect should appear for men on easy items and for women on difficult items is difficult to understand on any theoretical grounds. Hence, no explanation for this effect is offered at this time.

Although the anticipated anxiety x stress x task complexity interaction effects began to emerge when item difficulty was controlled, these effects failed to reach significance. As mentioned in Chapter IV, the effect of anxiety arousal may have been attenuated by the lack of time limits in performing the test. Thus, persistent effort could be utilized to overcome some of the debilitating effects of anxiety arousal.

On the basis of these results it seems clear that the Criteria Test is a difficult achievement task in view of the relatively high degree of association between performance level and intellectual ability. The fact that anxiety did not interact with level of stress or with item difficulty seems to be due to the absence of time constraints during test performance. If our explanation for this lack of interaction is valid, than this outcome suggests that the academic test performance of highly anxious students could be enhanced by removing time pressures from course examinations. However, the student must be willing to persist at the task in order to take advantage of the time factor.

TABLE 55

ANALYSIS OF VARIANCE FOR TEN EASY CRITERIA TEST ITEMS
MEN IN PSYCHOLOGY
(Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL	(A)	24.35	2	12.17	7.20	.01
SH	(B)	.67	1	.67	--	--
DA	(C)	3.67	1	3.67	--	--
CONDITIONS	(D)	25.21	1	25.21	14.92	.005
A x B		10.55	2	5.27	--	--
A x C		9.15	2	4.57	--	--
A x D		12.82	2	6.41	3.79	.05
B x C		3.67	1	3.67	--	--
B x D		1.01	1	1.01	--	--
C x D		.67	1	.67	--	--
A x B x C		1.95	2	.97	--	--
A x B x D		1.22	2	.61	--	--
A x C x D		.15	2	.07	--	--
B x C x D		.41	1	.41	--	--
A x B x C x D		1.02	2	.51	--	--
Within Cells		162.40	96	1.69		
Total		258.93	119			

TABLE 56

ANALYSIS OF VARIANCE FOR TEN DIFFICULT CRITERIA TEST ITEMS MEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL	(A)	33.72	2	16.86	6.85	.01
SH	(B)	.67	1	.67	--	--
DA	(C)	1.41	1	1.41	--	--
CONDITIONS	(D)	16.87	1	16.87	6.85	.01
A x B		3.95	2	1.97	--	--
A x C		2.92	2	1.46	--	--
A x D		.65	2	.33	--	--
B x C		.01	1	.01	--	--
B x D		1.41	1	1.41	--	--
C x D		3.01	1	3.01	--	--
A x B x C		1.82	2	.91	--	--
A x B x D		5.02	2	2.51	--	--
A x C x D		3.72	2	1.86	--	--
B x C x D		1.41	1	1.41	--	--
A x B x C x D		1.02	2	.51	--	--
Within Cells		236.40	96	2.46		
Total		313.99	119			

TABLE 57

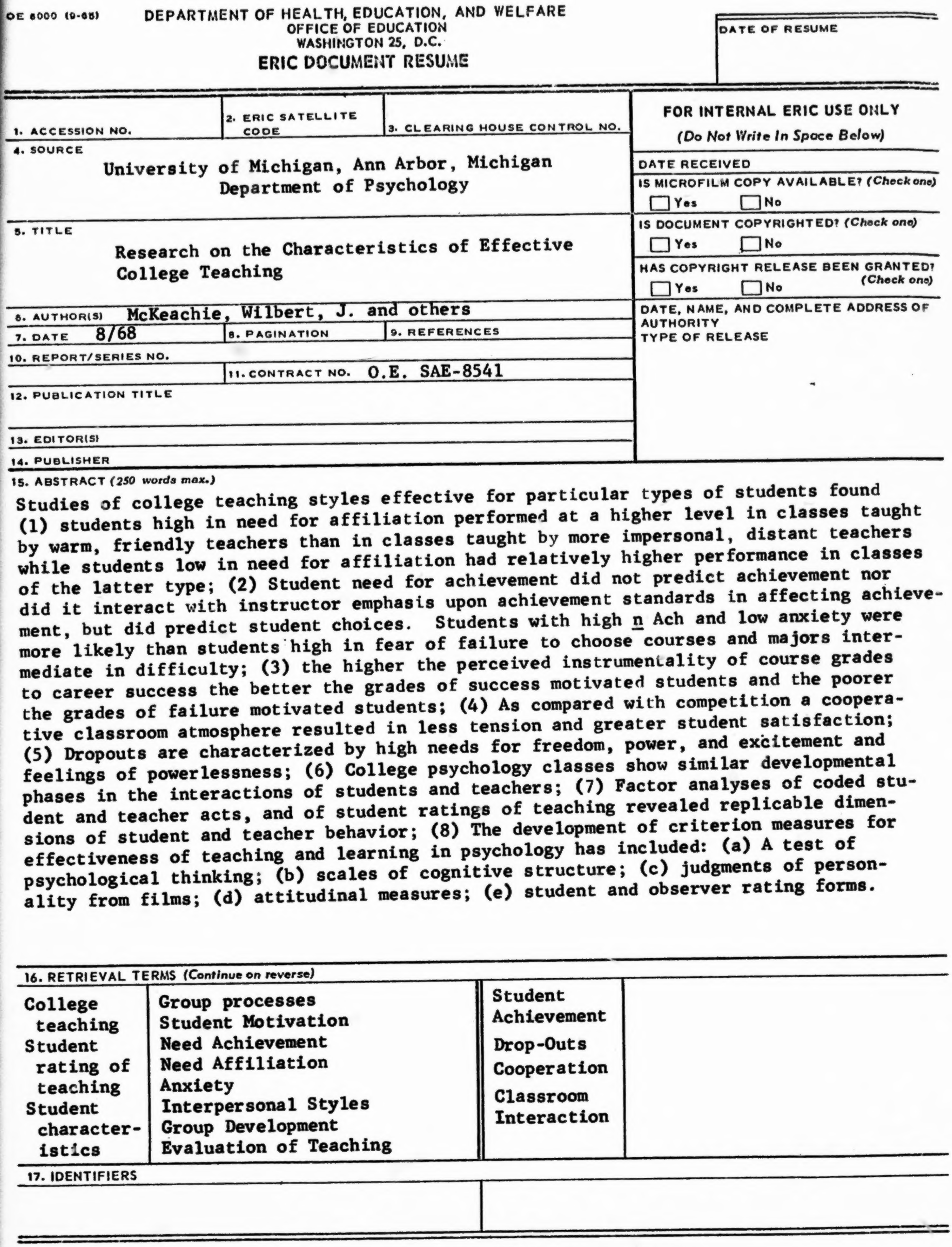
ANALYSIS OF VARIANCE FOR TEN EASY CRITERIA TEST ITEMS WOMEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL	(A)	39.47	2	19.73	10.44	.005
SH	(B)	2.70	1	2.70	--	--
DA	(C)	.53	1	.53	--	--
CONDITIONS	(D)	14.70	1	14.70	7.78	.01
A x B		.60	2	.30	--	--
A x C		.47	2	.23	--	--
A x D		3.20	2	1.60	--	--
B x C		6.53	1	6.53	3.46	$.05<p<.10$
B x D		.83	1	.83	--	--
C x D		1.20	1	1.20	--	--
A x B x C		2.47	2	1.23	--	--
A x B x D		2.87	2	1.43	--	--
A x C x D		.20	2	.10	--	--
B x C x D		1.20	1	1.20	--	--
A x B x C x D		3.80	2	1.90	--	--
Within Cells		181.20	96	1.89		
Total		261.97	119			

TABLE 58

ANALYSIS OF VARIANCE FOR TEN DIFFICULT CRITERIA TEST ITEMS WOMEN IN PSYCHOLOGY (Fall, 1964)

Source of Variation		Sums of Squares	df	Variance Estimate	F	P
SAT TOTAL	(A)	31.62	2	15.81	6.43	.01
SH	(B)	1.20	1	1.20	--	--
DA	(C)	.03	1	.03	--	--
CONDITIONS	(D)	24.30	1	24.30	9.88	.01
A x B		8.75	2	4.37	--	--
A x C		.42	2	.21	--	--
A x D		16.85	2	8.42	3.42	.05
B x C		5.63	1	5.63	2.29	.10<p<.20
B x D		.03	1	.03	--	--
C x D		6.53	1	6.53	2.65	.10
A x B x C		1.02	2	.51	--	--
A x B x D		.72	2	.36	--	--
A x C x D		2.92	2	1.46	--	--
B x C x D		.13	1	.13	--	--
A x B x C x D		1.32	2	.66	--	--
Within Cells		236.40	96	2.46		
Total		337.87	119			



OE 6000 (9-65) DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON 25, D.C.
ERIC DOCUMENT RESUME

DATE OF RESUME

1. ACCESSION NO.
2. ERIC SATELLITE CODE
3. CLEARING HOUSE CONTROL NO.

4. SOURCE
University of Michigan, Ann Arbor, Michigan
Department of Psychology

5. TITLE
Research on the Characteristics of Effective College Teaching

6. AUTHOR(S) McKeachie, Wilbert, J. and others
7. DATE 8/68
8. PAGINATION
9. REFERENCES
10. REPORT/SERIES NO.
11. CONTRACT NO. O.E. SAE-8541
12. PUBLICATION TITLE
13. EDITOR(S)
14. PUBLISHER

FOR INTERNAL ERIC USE ONLY
(Do Not Write In Space Below)

DATE RECEIVED
IS MICROFILM COPY AVAILABLE? *(Check one)*
☐ Yes ☐ No
IS DOCUMENT COPYRIGHTED? *(Check one)*
☐ Yes ☐ No
HAS COPYRIGHT RELEASE BEEN GRANTED? *(Check one)*
☐ Yes ☐ No
DATE, NAME, AND COMPLETE ADDRESS OF AUTHORITY
TYPE OF RELEASE

15. ABSTRACT *(250 words max.)*

Studies of college teaching styles effective for particular types of students found (1) students high in need for affiliation performed at a higher level in classes taught by warm, friendly teachers than in classes taught by more impersonal, distant teachers while students low in need for affiliation had relatively higher performance in classes of the latter type; (2) Student need for achievement did not predict achievement nor did it interact with instructor emphasis upon achievement standards in affecting achievement, but did predict student choices. Students with high n Ach and low anxiety were more likely than students high in fear of failure to choose courses and majors intermediate in difficulty; (3) the higher the perceived instrumentality of course grades to career success the better the grades of success motivated students and the poorer the grades of failure motivated students; (4) As compared with competition a cooperative classroom atmosphere resulted in less tension and greater student satisfaction; (5) Dropouts are characterized by high needs for freedom, power, and excitement and feelings of powerlessness; (6) College psychology classes show similar developmental phases in the interactions of students and teachers; (7) Factor analyses of coded student and teacher acts, and of student ratings of teaching revealed replicable dimensions of student and teacher behavior; (8) The development of criterion measures for effectiveness of teaching and learning in psychology has included: (a) A test of psychological thinking; (b) scales of cognitive structure; (c) judgments of personality from films; (d) attitudinal measures; (e) student and observer rating forms.

16. RETRIEVAL TERMS *(Continue on reverse)*

College teaching
Student rating of teaching
Student characteristics

Group processes
Student Motivation
Need Achievement
Need Affiliation
Anxiety
Interpersonal Styles
Group Development
Evaluation of Teaching

Student Achievement
Drop-Outs
Cooperation
Classroom Interaction

17. IDENTIFIERS

Figure 3. ERIC Document Resume

BR-5-0784
PA-24

JH II 7 III

ED0 24

FINAL REPORT

Project No. 05950
Grant No. OE-4-10-001

Research on the Characteristics of Effective Teaching

August 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

HE 000 149

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

Part Two

Section III: Teachers, Teaching Methods and Effectiveness
Section IV : Evaluation of Learning and Teaching

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

Journal of Educational Psychology
1964, Vol. 55, No. 6, 344–351

III-1: DIMENSIONS OF STUDENT EVALUATIONS OF TEACHING

ROBERT L. ISAACSON, WILBERT J. MCKEACHIE, JOHN E. MILHOLLAND,
YI G. LIN, MARGARET HOFELLER, JAMES W. BAERWALDT,
AND KARL L. ZINN
University of Michigan

III-1

DIMENSIONS OF STUDENT EVALUATIONS OF TEACHING[1]

ROBERT L. ISAACSON, WILBERT J. MCKEACHIE, JOHN E. MILHOLLAND,
YI G. LIN, MARGARET HOFELLER, JAMES W. BAERWALDT,
AND KARL L. ZINN
University of Michigan

Two groups of students in introductory psychology (691 in the fall semester and 569 in the spring semester) rated their teachers on a 46-item questionnaire, derived largely from factor analyses of 145 items that had been used in previous studies elsewhere. The results were factor analyzed separately by sex and semester, and factor similarities obtained by Kaiser's method. 6 factors appeared which were consistent over the 2 administrations, in different semesters, with different students, and teachers. They were labeled Skill, Overload, Structure, Feedback, Group Interaction, and Student-Teacher Rapport.

If we are to select or train teachers effectively, we need to know which teacher behaviors make differences in achievement of educational goals by their students. But before we can identify which behaviors are crucial, we need to know the dimensions on which teachers vary. This paper deals with the problem of the identification of the dimensions of teacher behavior as perceived by their students.

During the last 40 years many scales have been devised for rating characteristics of teaching (see Ryans, 1963, for a recent review). These scales include hundreds of different items, many of which are closely related. Fortunately several of the scales have been factor analyzed. Three studies report factor analyses of the 10 items comprising the Purdue Rating Scale. The first, a study by Smalzreid and Rem[illegible] (1943), used student ratings of 40 high-school teachers. The second analyzed ratings of 65 instructors at Purdue University (Creager, 1950). The third used 11 instructors at the University of Pittsburgh (Bendig, 1954). All three studies found two major factors. One of these contained items such as Sympathetic Attitude toward Students and Fairness in Grading. The other contained items like Self-Reliance and Confidence, Presentation of Subject Matter, and Interest in Subject Matter. In addition to these factors, Bendig also extracted a general factor with high loadings from almost all items.

In an earlier study Bendig (1953) carried out an inverse factor analysis of the Miami University Faculty Rating Scale and found three factors.

The first dimension was characterized at one end by instructors whose classes were interesting and smoothly controlled, and who had a good sense of humor. The second factor was characterized by instructors whose course material was loosely organized, but who had very friendly attitudes toward students and were fair in their assignments. The third factor was characterized at one extreme by instructors who were rated as appreciative of student efforts and attractive in appearance, but whose examinations are sometimes unfair.

Gibb (1955) developed a teacher-

---

[1] This research was supported in part by Office of Education Research Contract O. E. No. SAE-8451, to W. J. McKeachie, J. E. Milholland, and R. L. Isaacson.

behavior rating instrument based on social-psychological analyses of leader behavior. Factor analysis of his nine scales revealed four identifiable factors, which were named: Friendly Democratic Behaviors, Communication Behavior (the teacher who facilitates exchanges of information in the group), Organization Behavior (the instructor who was systematic and businesslike), and Academic Emphasis. Gibb's first factor appears to be similar to the first factor in the studies of the Purdue scale, but the second factor on the analyses of the Purdue scale is less clearly matched in Gibb's analysis.,

From these analyses it would appear that one dimension on which college teachers differ has to do with friendly, sympathetic relationships with students. Other dimensions have not been as clearly established. Only Gibb's scale contained enough items to permit very extensive sampling of the domain of teacher behavior. The present study was designed to replicate and extend Gibb's work by including Gibb's items with other items in ratings of new samples of college teachers.

PROCEDURE

In the fall of 1960 a sample of about 150 men and 150 women students was drawn in various sections of the introductory psychology course at the University of Michigan. Each student rated his teacher on 145 items culled from many different student rating instruments. Some of these items came from the Teacher Behavior Description Inventory developed by Gibb; others came from student evaluation used by the psychology department at Ohio State University and the University of Minnesota (Student Report on Classroom Teaching, Form B) as well as from student evaluation devices used formerly by the Department of Psychology at the University of Michigan. The item responses of this sample were divided into groups of about 50 items and factor analyzed separately for each sex. Seven factors were obtained in all of these analyses, and the two or three highest loading items from each factor for each sex were selected and another factor analysis performed. A total of 50 items was selected. This subsequent factor analysis produced eight factors for both the men and the women. Items which loaded on several factors were eliminated, and a comparison of the factors arising in the separate analyses of men and women was made. Thirty-four items which loaded highly on one of the men's and women's factors were incorporated in the new evaluation form presented in Table 1. Additional items included were concerned with the student's evaluations of the instructor and the course (Items 1 and 2, Table 1); three items from an earlier student evaluation instrument not included in the factor analyses (Items, 4, 29, 36); four items which were included to determine the relation between the scores obtained from a peer-nomination procedure carried out by the teachers (see Isaacson, McKeachie, & Milholland, 1963), and student perceptions of the same variables (Items 18, 32, 35, 36); two items to determine the students' changes related to more applied psychological matters (Items 25 and 46); and one new item designed to ascertain a measure of student interaction in the classroom (Item 10).

The resulting evaluation instrument consisted of 46 rating items and one "additional comments" question. The first two questions, asking for the students' overall evaluation of the teacher and the course, used a multiple-choice format; and the balance of the items used a 5-point rating scale. On all but the first two questions the students were asked to respond in terms of the frequency of the occurrence of certain behavioral acts in the classroom and *not* in terms of whether or not they considered the behavior as desirable or undesirable. The scale went from "almost always occurred" to "almost never occurred."

This report presents factor analyses of results from the use of this new evaluation instrument in the spring and fall semesters of 1961 in all sections of the introductory psychology course. Factors in the several analyses were related to each other by means of Kaiser's (1960) factor similarity technique. The factor analysis program provided a principal axes solution with varimax rotation, and the computer was instructed to obtain as many factors as necessary to account for 95% of the response variance. Data from men and women were analyzed separately both semesters, and factor similarity coefficients were obtained among the four analyses. Conceptually the factor similarity coefficient is analogous to a correlation coefficient since it is based on the cosine of the angle between two factor vectors. Because sampling distributions have not been developed for the factor similarity coefficient, it is impossible to make a statement about its statistical significance. Nonetheless, it seems to be safe to assume that coefficient values close to ±1 are indicative of very strong relationships.

TABLE 1

STEMS OF THE 46 ITEMS WHICH COMPRISED THE STUDENT EVALUATION INSTRUMENT

Item

1. How would you rate your instructor in general (all-around) teaching ability? *a.* An outstanding and stimulating instructor. *b.* A very good instructor. *c.* A good instructor. *d.* An adequate, but not stimulating instructor. *e.* A poor and inadequate instructor.
2. How would you rate the over-all value of this course? *a.* Superior. *b.* Very good. *c.* Good. *d.* Fair. *e.* Poor.
3. The students in the class were friendly.
4. Class time was well spent.
5. The instructor was skillful in observing student reactions.
6. He maintained definite standards of student performance.
7. In his class, I felt free to express my opinions.
8. The instructor assigned very difficult reading.
9. He encourages class members to work as a team.
10. Students argued with one another or with the instructor, not necessarily with hostility.
11. The instructor ruled the class with an iron hand.
12. The student was able to get personal help in this course.
13. The instructor invited criticism of his acts.
14. He anticipated student difficulties before they arose.
15. He decided in detail what should be done and how it should be done.
16. He listened attentively to what class members had to say.
17. He imposed his own goals on the students.
18. He exhibited a high degree of cultural attainment.
19. He put his material across in an interesting way.
20. He let the class set its own goals.
21. He was friendly.

Item

22. He followed an outline closely.
23. He tried to increase the interest of class members in his subject.
24. He asked for more than students could get done.
25. His efforts improved the ability of the students to deal effectively with their personal problems.
26. He announced exams in advance.
27. He told students when they had done a particularly good job.
28. He was sensitive to a student's desire to ask questions.
29. He continually emphasized grades.
30. He made it clear how each topic fit into the course.
31. He assigned a great amount of reading.
32. He was permissive and flexible.
33. He explained the reasons for his criticisms.
34. He had everything going according to schedule.
35. He was talkative.
36. The students frequently volunteered their own opinions.
37. He explained why he did things.
38. He complimented a student on his work in front of others.
39. He planned the activities of each class period in detail.
40. He stimulated the intellectual curiosity of his students.
41. He changed his approach to meet new situations.
42. By the way he acted, he made the students feel afraid of him.
43. He was aware of it when students failed to keep up with him in class.
44. He criticized poor work.
45. He explained clearly and his explanations were to the point.
46. The instructor's efforts improved the ability of the students to understand deviant individuals.

The group of teachers evaluated in the fall of 1961 was entirely different from those evaluated in the spring semester, 1961. The students were assured that their reactions would be treated so as to preserve their anonymity. The form was administered during a regular classroom session. All students had ample time to complete the form. Data from 240 male students and 329 female students were obtained in the spring term and from 297 men and 392 women in the fall. These students were instructed by 16 teachers in the spring and 17 teachers in the fall.

RESULTS AND DISCUSSION

We obtained similarity coefficients for every factor from one factor analysis with each factor in every other factor analysis we conducted. Table 2 summarizes these results. The first column of the table lists the factor analysis which was made the basis for the comparisons. Each cell contains a factor similarity cofficient and

TABLE 2

SIMILARITY ANALYSES FOR THE FOUR 1961 FACTOR ANALYSES

Factor	Similarities with factors in other analyses							
	MS		FS		MF		FF	
	Coefficient	Factor	Coefficient	Factor	Coefficient	Factor	Coefficient	Factor
MS								
1. Skill			.94	1	.92	1	.97	1
2. Overload			.98	2	.95	2	.98	2
3. Structure			.97	3	.93	3	.96	3
4. Evaluation			.88	4	.95	4	.91	6
5. Interaction			.54	5	.87	5	.72	5
6. Rapport			.82	6	.88	6	.56	5
7.			.58	8	.58	7	.75	7
8.			.62	7	.63	9	.69	8
9.			.62	9	.53	7	.90	4
FS								
1. Skill	.94	1			.98	1	.99	1
2. Overload	.98	2			.98	2	.98	2
3. Structure	.97	3			.98	3	.97	3
4. Evaluation	.87	4			.78	4	.64	6
5. Interaction	.54	5			.81	5	.78	5
6. Rapport	.82	6			.94	6	.53	7
7.	.62	8			.82	7	.66	8
8.	.66	5			.62	8	.62	9
9.	.62	9			.54	9	.64	7
MF								
1. Skill	.92	1	.98	1			.98	1
2. Overload	.95	2	.98	2			.98	2
3. Structure	.93	3	.98	3			.98	3
4. Evaluation	.95	4	.78	4			.95	4
5. Interaction	.87	5	.81	5			.76	5
6. Rapport	.88	6	.94	6			.70	9
7.	.58	7	.82	7			.70	4
8.	.60	8	.62	8			.76	8
9.	.63	8	.56	5			.86	7
FF								
1. Skill	.97	1	.99	1	.98	1		
2. Overload	.98	2	.98	2	.98	2		
3. Structure	.96	3	.97	3	.98	3		
4. Evaluation	.90	9	.53	9	.95	4		
5. Interaction	.72	5	.78	5	.76	5		
6. Rapport	.91	4	.64	4	.70	9		
7.	.75	7	.64	9	.86	9		
8.	.69	8	.66	7	.76	8		
9.	.58	8	.62	8	.52	8		

Note.—Abbreviations are MS—men, spring; FS—female, spring; MF—men, fall; and FF—female, fall.

a number which specifies the factor from another analysis which generated the similarity coefficient. In other words, each cell entry tells which factor of one analysis is "most similar" to a given factor in the first column of the table. Thus, the first entry in Column FS indicates that the male-spring factor MS 1 had a higher similarity coefficient (.94) with the female-spring factor FS 1 than any other of the female-spring factors. It will be noted that the Factor 1's of each study all have their highest similarity coefficients with Factor 1's from the other factor analyses. Corresponding relations hold for Factors 2, 3, and 5. Factor 4 exhibits four exceptions in the 12 comparisons, and Factor 6 has six exceptions. The remaining three factors are relatively inconsistent. The high degree of consistency and the high factor similarity coefficients across the four factor analyses suggest stability among the first six factors.

Since Kaiser's method for computing factor similarities is not well known, the complete matrix of factor similarity scores for one comparison (men, spring, 1961, with men, fall, 1961) is presented in Table 3. It is hoped that this will provide the reader with an idea of the type of data used to compile the results presented in Table 2. Comparisons of this kind illustrate a case of maximum difference between groups since in each population students and teachers are completely different. The factors which have been labeled tend to show higher similarity coefficients with their labeled counterparts than do the unlabeled factors. Furthermore, the less stable unlabeled factors tend to be more diluted than do the more stable labeled factors. In Table 3, for example, unlabeled Factors 7, 8, and 9 have more medium size coefficients than any of the labeled factors.

The factor similarity analysis suggests that six factors can be regarded as evidencing stability over sexes and evaluation periods, student groups, and teacher groups. The items loading on them are shown in Table 4.

Factor 1 in all of the factor analyses accounted for the greatest amount of variance of the ratings. Seventeen of the items in the evaluation form were found to be highly loaded on this factor for every group. We believe the items describing Factor 1 to be a set related to general teaching skills. They describe a teaching pattern in which material is put across in an interesting way (Item 19), the intellectual curiosity of the students is stimulated (Item 40), things are explained clearly (Item 45), and the

TABLE 3

SIMILARITY COEFFICIENTS[a] BETWEEN FACTORS OBTAINED FROM MALE STUDENTS IN THE SPRING AND THE FALL OF 1961

Spring factor	Fall factor								
	1	2	3	4	5	6	7	8	9
1. Skill	.92	.02	.04	.09	.01	−.12	.28	−.07	.20
2. Overload	−.03	.95	.06	.05	.00	−.02	.00	−.28	−.09
3. Structure	.08	−.04	.93	.04	−.04	.05	−.34	.06	−.04
4. Feedback	.04	−.02	−.10	.95	.10	−.17	−.17	.14	−.04
5. Interaction	.03	−.06	−.04	−.05	.87	.16	−.25	−.30	.22
6. Rapport	.01	.11	.04	.17	.03	.88	.30	.30	.06
7.	−.11	−.20	.22	.14	.17	−.02	.58	−.43	−.57
8.	.22	.13	−.10	−.19	.34	−.11	−.12	.60	.63
9.	−.28	.13	.24	−.03	.29	−.38	.52	.41	.42

[a] The similarity coefficients below the diagonal appeared when the spring factors were used as the basis for the comparisons; those above the diagonal when the fall factors were the basis.

TABLE 4

LOADINGS OF .30 OR MORE OF STUDENT RATING FORM ITEMS ON THE SIX STABLE FACTORS APPEARING IN ANALYSES CARRIED OUT WITH MALE AND FEMALE STUDENTS IN INTRODUCTORY PSYCHOLOGY IN THE SPRING AND FALL SEMESTERS OF 1961

Item	Factor																							
	1. Skill				2. Overload				3. Structure				4. Feedback				5. Interaction				6. Rapport			
	MS	FS	MF	FF	MS	FS	MF	FF	MS	FS	MF	FF	MS	FS	MF	FF	MS	MF	FS	FF	MS	FS	MF	FF
1.	82	86	83	86																				
2.	34	59	67	67																				
3.																	38			36			35	
4.	63	67	68	68					37															
5.	57	64	59	78																				
6.	37	44	39	49												33								
7.		31															56			58			43	
8.					68	70	68	65																
9.	37			44			31		−30															
10.																	38	49	49					
11.																								
12.	31	35		32									32										50	43
13.	37			32									46									38	37	62
14.	57	55	56	64																				32
15.	46			34					42	60	40	45												
16.		33		43																33	41	46	56	
17.																								
18.	57	57	44	52																				
19.	86	85	81	88																				
20.				30					35															
21	39	35		39																30	55	58	50	
22									64	69	70	70												
23	64	49	49	72																		38	36	
24					54	68	66	60													−30			
25	48	53	51	60										32										
26.																					33	35		
27.													43	37	58	52						45		
28.															32	31					36	40		
29.																								
30.	56	47	57	67					31	33														
31.					70	67	70	71																
32.																					51	30	40	3
33.	56	46	38	56																	42	55	47	
34.	32		32	42					61	70	58	50												
35.	48	30																			38	40		
36.		37		51													30	49	43	50	47	35	36	
37.	56	44	46	66																		51	31	
38.	35			32									42	49	54	51								
39.	36								58	73	68	65												
40.	76	81	74	85																				
41.	69	67	56	74																				
42.	−30			−34																−36	−56	−30		
43.		35	35	58													42							
44.															36	33								
45.	78	71	62	81																				
46.	53	42	47	60																				

Note.—Abbreviations are MS—men, spring; FS—female, spring; MF—men, fall; FF—female, fall.

teacher is skillful in observing student reactions (Item 5). Endorsement of these teaching qualities goes along with favorable evaluation of "all-around teaching ability" (Item 1) and with Item 2, which asks the student to indicate the all-around value of the course.

The number and types of items which cluster together to form Factor 1, indicate that this factor represents what is often called a halo effect in student evaluations. In fact, we found that some shorter student-evaluation forms used in our department were comprised solely of items on this factor. It seems to correspond to the Professional Impression factor found in analyses of the Purdue scale and to Gibb's Communication factor. We have labeled Factor 1 as the Skill factor, representing both the

types of items from which it stems and the loading of Item 1 (Ability) on it.

Our second stable factor (Factor 2) clearly deals with the amount and difficulty of the work the instructor expects of his students. The three items consistently appearing on this factor are:

8. Assigned very difficult reading.
24. Asked for more than students could get done.
31. Assigned a great deal of reading.

We call this the Overload factor. It appears to be similar to Gibb's Production scale.

A third stable factor (Factor 3) deals with the instructor's organization and planning of the course. Four items loaded well on this factor:

15. He decided in detail what should be done and how it should be done.
22. Followed an outline closely.
34. Had everything going according to schedule.
39. Planned the activities of each class period in detail.

We call this the Structure factor. It appears to be similar to Gibb's Organization factor.

The fourth stable factor (Factor 4) contains items which suggest that the teacher voices concern over the quality of the students' work. Two items always associated with this factor were:

27. He told students when they had done a particularly good job.
38. He complimented students in front of others.

One other item appeared to be associated with this factor:

44. He criticized poor work.

These, along with the type of other items appearing on this factor, suggest that it is related to the instructor's evaluative comments about classroom performance and it was labeled the Feedback factor.[2]

The fifth stable factor (Factor 5) found in the ratings was one which we think of as a Group Interaction dimension. It is identified by items:

3. The students in the class were friendly.
7. In his class, I felt free to express my opinions.
10. Students argue with one another or with the instructor, not necessarily with hostility.
36. The students frequently volunteered their own opinions.

A Student-Teacher rapport factor (Factor 6) was also found rather consistently, appearing in three of our four analyses. This factor was marked by the regular appearance of four items:

16. He (the teacher) listened attentatively to what class member had to say.
21. He was friendly.
32. He was permissive and flexible.
33. He explained the reasons for his criticism.

This factor may be similar to Gibb's Factor 1, Friendly Democratic Behavior, which included items on initiation membership and integration. These items did not survive our original item-selection procedures.

On each of the analyses three less stable factors appeared. Each of these unstable factors in a given analysis was compared with those appearing in the other analyses. None from one analysis table corresponded with any factor appearing in another. It is rather surprising that this procedure revealed no factors common only to men or to women and no factor common only to the semester under analysis.

---

[2] The reader of our earlier article (Isaacson et al., 1963) will note that these items were then included in the Student Rapport factor, a rather diffuse collection of items. The new grouping, resulting from comparisons of the four factor analyses, seems more cohesive.

Our results have generally confirmed the factors identified in studies prior to ours, but previous studies were limited to fewer items than the original pool with which we started. The fact that 34 of our final 46 items were the residue from the 145 we used at the outset (which themselves had seen previous service) gives us some confidence that we covered the domain adequately.

REFERENCES

BENDIG, A. W. An inverted factor analysis study of student-rated introductory psychology instructors. *J. exp. Educ.*, 1953, **21**, 333–336.

BENDIG, A. W. A factor analysis of student ratings of psychology instructors on the Purdue scale. *J. educ. Psychol.*, 1954, **45**, 385–393.

CREAGER, J. A. A multiple factor analysis of the Purdue Rating Scale for Instructors. Unpublished master's thesis, Purdue University, 1950.

GIBB, C. A. Classroom behavior of the college teacher. *Educ. psychol. Measmt.*, 1955, **15**, 254–263.

ISAACSON, R. L., MCKEACHIE, W. J., & MILHOLLAND, J. E. Correlation of teacher personality variables and student ratings. *J. educ. Psychol.*, 1963, **54**, 110–117.

KAISER, H. F. Relating factors between studies based upon different individuals. Bureau of Educational Research, University of Illinois, 1960. (Ditto)

RYANS, D. G. Assessment of teacher behavior and instruction. *Rev. educ. Res.*, 1963, **33**, 415–441.

SMALZREID, N. T., & REMMERS, H. H. A factor analysis of the Purdue Rating Scale for Instructors. *J. educ. Psychol.*, 1943, **34**, 363–367.

(Received March 19, 1964)

III - 2: Student Evaluations of Recitation Sections in Beginning Economics

Robert L. Isaacson

Any attempt to determine characteristics associated with effective college teaching must be concerned with measures of "effectiveness." One popular measure has been the results of student evaluations of the teachers and the classes. To construct and utilize evaluation instruments soundly, however, the dimensions of teachers' classroom behavior susceptible to student evaluation must be known. Only after this has been done will it be possible to look for correlates to ratings of effective teaching which are stable across teacher populations in different content areas.

In Chapter III - 1 we reported six factors obtained from student evaluations in the introductory psychology course at the University of Michigan which had consistently appeared in factor analyses of student evaluations of the course and instructors over four semesters. One naturally wonders whether or not these same factors, or factors like them, would be obtained from student evaluations using a different set of items in another academic area.

This report deals with a factor analysis of the evaluations made by men and women enrolled in the introductory economics course at The University of Michigan.

Method

Student evaluations of the textbooks, lecturer, discussion leader, classroom organization and procedures are traditionally obtained from students in the introductory economics course at the University of Michigan. The course lectures are handled by a senior staff member while recitation sections are frequently taught by teaching fellows, who are advanced graduate students in the department. The evaluations are made anonymously by the students and are available to the staff member concerned only after the grades for the term have been submitted.

Through the cooperation of Professor Daniel R. Fusfeld, the student evaluations were made available for the current analysis. The instrument contained 79 items. Some of the items called for short descriptive answers and these were eliminated from our analyses. Items which were concerned with textbooks and other reading assignments and items which referred to the lecturer were also excluded from our analyses. The 28 items used were related to the written assignments made in the class, tests, the organization and structure of the recitation class, qualities of the teacher, the evaluation of the teacher and the course, and the impact of the course upon the student's beliefs and attitudes. The items are reproduced in Appendix 1.

While all students fill out evaluation forms, not all of the relevant items were completed in all questionnaires. Other students failed to identify their sex. Only those forms complete in both respects were used. The number of completed forms from men was 224 and from women was 69. The imbalance between these numbers reflects a corresponding imbalance in the total course enrollment.

The responses of the students were factor analyzed separately by sex using a principal axes solution followed by Varimax rotation.

Results and Discussion

The loadings of each of the 28 items which were greater than .30 on every factor emerging from the analyses are presented in Table 1. The factors have been ordered to make it easy to compare the factors obtained from the men and the women. The percent of the extracted variance accounted for by each factor for each sex is given at the bottom of each factor column.

From the analyses five factors emerged which appeared to be similar across the sexes. These are factors 1 through 5 in Table 1. Factor 6 in Table 1 represents a factor apparently distinct for each sex. Since only six factors emerged from the analysis of the men's data, the last four factors of this table represent factors found only in the women's data.

From the nature of the items loading on the factors we believed that the following descriptive name could be applied to the first five factors.

Factor 1: Skill

The items loading on this factor dealt with the students' opinion of the instructor's organization of the class (item 6) and the application of economic theory to real world problems (item 8). Another item (16) was related to how well prepared the teacher was for class. Item 28 asked for the students' opinions, from favorable to unfavorable, of the instructor. The direction of loadings was such that the greater the preparedness of the teacher, the more favorable were the students' reactions toward the instructor. This factor would appear to be most closely related to the "skill" factor, (factor 1), in our earlier report (Isaacson, et al., 1964). It represented a cluster of items related to the overall effectiveness of the teacher.

Factor 2: Student Rapport

Items which loaded on this factor were ones which indicated a high respect for the students (item 17), high willingness to help the students (item 18), high tolerance for the expression of student opinion (item 19), and willingness to admit being wrong (item 20). Along with these items was one which indicated that the teacher maintained a consistent set of standards of evaluating the students. This factor seemed to be similar to a factor found in the analysis of the evaluations obtained from psychology students which we referred to as "student rapport."

Factor 3: Value of the Course.

The third factor obtained from the evaluations was one which had three items loading highly on it. These were related to the students' change in attitudes and ideas about the course (item 25), the value of the course (item 26), and whether or not the test covered important points in the course (item 12). Students who reported a considerable change in their ideas and beliefs about economics thought the course valuable. There is no way to compare this factor with results of our earlier work since comparable items were not present in both studies. The items related to course value loaded on the teacher skill factor in our earlier report of the analyses of student evaluations in the psychology course.

Factor 4: Change in Beliefs

This factor represents an interesting cluster of items which again is not directly comparable to our earlier factors due to lack of corresponding items. Overall, the factor has to do with the change in beliefs of students taking the economics course. The highest loadings of the cluster were items 21 and 22. In these the student was asked whether his experiences in the course made him question his own beliefs and whether or not he liked to have his beliefs questioned. There was a correlation of .68 between these two items. This would suggest that students who had their attitudes changed liked the experience or, conversely, that those who liked to have their attitudes changed liked the teachers who acted in such a manner as to make them change or question their own belief structure. The other item loading on this factor was one in which students reported too little time was allowed for question and answer sessions between the class and the teacher.

Factor 5: Overload

The descriptive title used for this factor is drawn from our previous work and indicates our belief that this factor represents the same dimension observed in the psychology course. In this case the factor represents the degree to which the student finds the work excessive. In the present analysis this classroom dimension seems reflected by two items describing the length and complexity of the written assignments (items 1 and 2).

Factor 6 (men): Structure

For the men, at least, another of our earlier factors (Structure) seems to be present. This factor deals with the degree of organization exhibited by the teacher in presenting his material.

This last factor obtained from the analyses of the men's rating included four items which indicated that the instructor had a too complicated presentation in class (item 5), strayed from the topic in class (item 4), gave tests that were too hard (item 11) and had deep knowledge of the subject. Students who felt that the recitation presentation was too complicated, also felt that the tests were too hard but that the teacher had a deep knowledge of the material he was presenting. Part of this "structure complex" appears in the eighth factor of the women's data (items 11 and 15).

Factor 6 (women): Considerateness

This factor, unique to women, represents a set of items which appear related to the considerateness, or thoughtfulness, of the teacher.

The sixth factor has to do with students' perception of the difficulty of the course and the desire of the teacher to help students. Four items load on this factor. Item 13 asks about the marking of the instructor in the course. Those students who marked item 13 indicating that the marking was too easy were those who also indicated that the teacher had a great willingness to help (item 18). Items 2 and 3 also correlated with this factor. These two items ask about the difficulty of the course and the contribution of this course to economic knowledge. Those students who rated the marking as too easy and the teachers as willing to help, marked the course as being too simple and contributing very little to their economic knowledge. There is no corresponding factor to be found in the male data.

Factors 7, 8, 9, and 10 (Women)

The seventh factor obtained from the women's data shows a doublet of items consisting of items 26 and 27 which have to do with the value of the course and whether or not the students like it. The significance of the separation of factor 7 from factor 3 is not clear, except that it may reflect some greater discriminative ability of the women in these areas covered by three items (item 25, 26, and 27).

Factor 8 from the factor analysis of the women's data is a doublet of two items (items 11 and 15), in which the teacher is marked as being too easy and having shallow knowledge in the field of economics. These items were found to appear in male factor 6, as mentioned above.

The ninth factor consists of three items (items 4, 9, and 23) which collectively suggest a teacher who underestimates student abilities, strays from the topic, and, perhaps as a result, leaves too much time for discussion.

The tenth factor represents a cluster of three items (item 10, 12, and 14) which have to do with the teacher's testing and grading policies. One extreme of the dimension represents an ability to devise tests which test important facets of the course, to be consistent in grading, and a tendency to have too many tests.

Conclusion

Even though the student evaluation form used in the economics course was made up of different items than were used in our previous study of psychology students, four factors from this earlier work seem to be represented. These are: Teacher skill, Student Rapport, Overload, and Structure. The economics students of both sexes also had two factors which were not previously found in the psychology course. One was related to their change in attitudes and beliefs about economics (Change in Beliefs) and another concerned with the value of the Course (Value of the Course). The fact that four of our six "stable factors" seemed to emerge in the present study despite the use of a different form and in another academic area encourages the belief that they may approach fundamental dimensions of classroom instruction. The failure to find the other two factors "Evaluation" and "Interaction" may be due to a lack of items adequately testing these dimensions in the current questionnaire.

The factors related to the changing of attitudes and beliefs found in the data from the economics students suggests that items like those loading on this factor should be included in future evaluation instruments so that its stability across sexes, instructors, and academic areas may be ascertained.

Appendix 1

The twenty-eight items from the economics evaluation instrument used in the analyses.

(1) The written papers are:
___1. much too long
___2. somewhat too long
___3. about right length
___4. somewhat too brief
___5. much too brief

(2) The written papers are:
___1. much too complicated
___2. somewhat too complicated
___3. about right
___4. somewhat too simplified
___5. much too simplified

(3) How much do the written papers add to your knowledge of economics?
___1. very much
___2. somewhat
___3. not at all

(4) The presentation:
___1. follows the text much too closely
___2. follows the text somewhat too closely
___3. is about right
___4. strays somewhat too far from the text
___5. strays much too far from the text

(5) The presentation is:
___1. much too complicated
___2. somewhat too complicated
___3. about right
___4. somewhat too simplified
___5. much too simplified

(6) The presentation is organized:
___1. very well
___2. fairly well
___3. fairly poorly
___4. very poorly

(7) The explanations of important points are:
___1. much too detailed
___2. somewhat too detailed
___3. about right
___4. not quite detailed enough
___5. not by far detailed enough

(8) How well does the recitation instructor show how the theory applies to the real world?
___1. very poorly
___2. fairly poorly
___3. fairly well
___4. very well

(9) How much time is left for class discussion and questions?
___1. much too much
___2. somewhat too much
___3. about right amount
___4. somewhat too little
___5. much too little

(10) The tests are:
___1. too many
___2. right in number
___3. too few

(11) The tests are:
___1. too easy
___2. about right
___3. too hard

(12) The tests seem to cover the important things in the course:
___1. very well
___2. fairly well
___3. fairly poorly
___4. very poorly

(13) The marking in this course is generally:
___1. much too easy
___2. somewhat too easy
___3. about right
___4. somewhat too hard
___5. much too hard

(14) The instructor's standard of marking appears to be:
___1. very consistent
___2. fairly consistent
___3. fairly inconsistent
___4. very inconsistent

(15) His knowledge in the subject matter appears to be:
___1. very deep
___2. fairly deep
___3. fairly shallow
___4. very shallow

(16) When he comes to class he appears to be:
___1. very poorly prepared
___2. fairly poorly prepared
___3. fairly well prepared
___4. very well prepared

(17) His respect for students as persons appears to be:
___1. very low
___2. fairly low
___3. fairly high
___4. very high

(18) His willingness to help students appears to be:
___1. very high
___2. fairly high
___3. fairly low
___4. very low

(19) In matters of opinion (rather than matter of fact or logic) his tolerance of views other than his own appears to be:
___1. very high
___2. fairly high
___3. fairly low
___4. very low

(20) If he is wrong in class, how willing is he to admit it?
___1. very unwilling
___2. fairly unwilling
___3. fairly willing
___4. very willing

(21) Does he try to make you question your own beliefs and ideas in economic matters?
___1. yes, very much
___2. yes, somewhat
___3. yes, little
___4. no, not at all

(22) How do you feel about this? (applies to question 21)
___1. I like it very much
___2. I like it somewhat
___3. It makes no difference to me
___4. I dislike it somewhat
___5. I dislike it very much

(23) Does he overestimate or underestimate the students' level of intelligence?
___1. he overestimates it greatly
___2. he overestimates it somewhat
___3. he estimates it correctly
___4. he underestimates it somewhat
___5. he underestimates it greatly

(24) Would you want to take another course from this instructor?

___1. I certainly would
___2. I would not mind
___3. I would prefer not to
___4. I would refuse to

(25) How much to you feel your ideas and beliefs in economic matters have changed since you began to study economics?

___1. very little
___2. fairly little
___3. fairly much
___4. very much

(26) Do you think this course is valuable for you?

___1. it is very valuable for me
___2. it is fairly valuable for me
___3. it has little value for me
___4. it has no value for me

(27) Taking everything into account, how do you feel about this course?

___1. I dislike it very much
___2. I dislike it somewhat
___3. I neither like it or dislike it
___4. I like it somewhat
___5. I like it very much

(28) How does the recitation section instructor in this course compare with the instructors in courses outside economics which you are taking this term?

___1. very favorably
___2. fairly favorably
___3. neither favorably, nor unfavorably
___4. fairly unfavorably
___5. very unfavorably

Table 1

The loadings of .30 or more of student rating form items on the six male factors and 10 female factors. The men's loadings are reported in the columns marked "M" and the women's loadings are reported in the columns marked "W". Decimal points omitted. The percent of extracted variance accounted for by each factor is given at the bottom of each column.

	Factor 1		Factor 2		Factor 3		Factor 4		Factor 5		Factor 6		Factor 7	Factor 8	Factor 9	Factor 10
	M	W	M	W	M	W	M	W	M	W	M	W	W	W	W	W
1									-50	-55						
2									-56	-50		-38				
3					-37							37				
4							39				-33				-61	
5										-38	37					
6	80	81														
7										-62	-30					
8	-55	-57						36								
9						30	-39	-49							36	
10																31
11											-37			55		
12					-30	-37										32
13												60				
14	36		-42													55
15	48					-39					33			-58		
16	-73	-87														
17	-33		65	78												
18	43		-61	-46								50				
19			-59	-58												
20			52	72												
21							-69	-82								
22	71						-66	-78								
23				32											-30	
24		76	-31													
25					56	81										
26					-71	-39							-46			
27	-32				48								73			
28	81	76														
	34.6	21.2	19.2	14.0	14.8	9.3	14.5	1.5	9.1	9.0	7.8	7.3	6.9	6.5	5.6	5.2

Percent variance removed

III - 3: Further Study of Dimensions of Student Evaluations (Factor Analysis of Means)

Yi-Guang Lin and Wilbert J. McKeachie

Problem

In the study by Isaacson, et al. (1964) on the dimensions of student evaluation of teaching, the factors extracted were based on correlation matrices computed over the total introductory psychology course population (Male spring sample, 1961 [MS] = 240 men, Female spring sample, 1961 [FS] = 329 Women). Norman (1967) has suggested that in factor analysis more attention should be given to partitioning the correlations in various ways. Factor analyses of student ratings of teachers are derived from variance in ratings between teachers and variance between students rating a given teacher.

If we consider the classroom mean rating ($X_{h.}$) as an index to represent a characteristic of that class and correlate item X and item Y over the class group mean ratings, then the correlation coefficient between items X and Y is based on the inter-classroom variation and covariation only. The dimensions identified by factor analyzing the correlation matrix based on the inter-class variation and covariations, are therefore more meaningful in terms of representing the variance due to differences between teachers rather than a mixture of variance due to differences between teachers and variance due to differences between students reacting to the same teaching.

Procedure

The present study factor analyzed the correlation matrix based on the inter-classroom group variation and covariation in the data previously collected by Isaacson et al. The mean ratings of 37 classes on the 46 items were computed. A 46 x 46 intercorrelation matrix was factor analyzed by the principal axes method. Seven factors were extracted and then rotated by the normalized varimax criterion. Kaiser's indices of factor similarity were computed between the original 9 factors of the previous studies and 7 factors of the present study to assess the degree of similarity of factors identified in the different studies.

Results

Factor I, Skill Factor

The first factor is a general factor with 27 items loaded on it accounting for 51 per cent of common variance. It has similarity indices of .94 and .90 with the corresponding "Skill" factors in the previous study.

Three items on this factor, 16, 21, 32, were loaded on the "Student-Teacher Rapport" factor in the previous studies. Table 1 is a listing of salient items and their loadings on this general skill factor.

Table I
Factor I, Skill Factor 51.41%

Item #	Loading	Variable
1	.94	General Teaching ability.
19	.94	He put his material across in an interesting way.
41	.91	He changed his approach to meet new situations.
40	.90	He stimulated the intellectual curiosity of his students.
45	.89	He explained clearly and his explanations were to the point.
5	.85	The instructor was skillful in observing student.
35	.85	He was talkative.
14	.84	He anticipated student difficulties before they arose.
23	.82	He tried to increase the interest of class member in his subject.
12	.81	The student was able to get personal help in the course.
18	.80	He exhibited a high degree of cultural attainment.

Table 1 (Concluded)

Item #	Loading	Variable
33	.80	He explained the reasons for his criticisms.
38	.75	He complimented a student on his work in front of others.
37	.74	He explained why he did things.
2	.72	Over-all value of the course.
4	.71	Class time well spent.
43	.65	He was aware of it when students failed to keep up with him in class.
7	.62	In his class, I felt free to express my opinions.
30	.58	He made it clear how each topic fit into the course.
25	.61	His efforts improved the ability of the students to deal effectively with their personal problems.
6	.56	He maintained definite standards of student performance.
15	.53	He decided in detail what should be done and how it should be done.
13	.53	The instructor invited criticisms of his acts.
36	.45	The students frequently volunteered their own opinions.
21	.76	He is friendly.
16	.67	He listened attentively to what class members had to say.
32	.47	He was permissive and flexible.

Factor II, Structure Factor

The Structure factor is a well-identified factor with similarity indices of .96 and .93 with the corresponding "Structure" factors in the previous study.

Table 2
Factor II, Structure Factor, 13.99%

Item #	Loading	Variable
22	.81	He followed an outline closely.
34	.86	He had everything going according to schedule.
39	.84	He planned the activities of each class period in detail.
4	.55	Class time was well spent.
15	.60	He decided in detail what should be done and how it should be done.

Table 2 (Concluded)

Item #	Loading	Variable
30	.49	He made it clear how each topic fit into the course.
20	-.63	He let the class set its own goals.

Factor III, Feedback Factor

This factor is tentatively labeled as a "Feedback" factor. The items 26, 27, and 33 seem to have to do with the feedback of information. Items 26 and 27 had high loadings on the "Feedback" factor identified earlier. But the similarity indices were only .39 and .20.

Table 3
Factor III, Feedback Factor, 9.61%

Item #	Loading	Variable
26	.76	He announced exams in advance.
27	.67	He told students when they had done a particularly good job.
28	.57	He was sensitive to a student's desire to ask questions.
33	.43	He explained the reasons for his criticisms.
9	-.48	He encouraged class members to work as a team.
11	-.63	The instructor ruled the class with an iron hand.

Factor IV, Overload Factor

This factor is also a well-identified factor with similarity indices of .99 and .92 with the corresponding "Overload" factor in the previous studies.

Table 4
Factor IV, Overload Factor, 8.80%

Item #	Loading	Variable
8	.84	The instructor assigned very difficult reading.
31	.89	He assigned a great amount of reading.
24	.76	He asked for more than students could get done.

Factor V, "Group-Interaction" Factor

Items 3, 10, and 36 were the same items previously loaded on the "Group-Interaction" factor. But the similarity indices were quite low (.48 and .28).

Table 5
Factor V, Group Interaction Factor, 6.15%

Item #	Loading	Variable
10	.69	Students argued with one another or with the instructor, not necessarily with hostility.
36	.61	The students frequently volunteered their own opinions.
32	.39	He was permissive and flexible.
3	.38	The students in the class were friendly.

Factor VI, "Student-centered Facilitation" Factor

The items loaded in this factor seem to suggest the effort of the instructor to facilitate student-centered activities in the classroom. So it was tentatively labeled as a "Student-centered facilitation" factor. It is a very minor factor accounting for only 5.7 per cent of common variance. Item 25 also had high loading (.61) on the "Skill" factor in the present study. Items 25 and 46 were loaded on "Skill" factor in the previous studies.

Table 6
Factor VI, "Student-Centered Facilitation" Factor, 5.72%

Item #	Loading	
46	.48	The Instructor's efforts improved the ability of the students to understand deviant individuals.
25	.38	His efforts improved the ability of the students to deal effectively with their personal problems.
20	.39	He imposed his own goals on the students.

Factor VII, Achievement Cues Factor

Items 6 and 44 were considered to provide Achievement cues and item 29 to provide anxiety cues; So this factor was tentatively labeled as an "Achievement cues" factor. Items 18, 6, and 16 were also highly loaded on the "Skill" factor in the present study. Items 18 and 6 were also loaded on "Skill" factors in the previous studies.

Table 7

Factor VII, Achievement Cues Factor, 4.32%

Item #	Loading	Variable
44	.51	He criticizes poor work.
29	.40	He continually emphasized grades.
18	.37	He exhibited a high degree of cultural attainment.
6	.33	He maintained definite standards of student performance.
16	-.36	He listened attentively to what class members had to say.

Discussion

Three factors: "Skill", "Structure" and "Overload" factors had very high similarity indices to the corresponding factors in the original Isaacson, et al studies. These three factors are well defined factors in terms of stability of factors over samples and over methods.

The items to define "Group Interraction" factor identified in the present study were also loaded on the "Group Interaction" factors in the previous studies, even though the similarity indices were rather low. The items to define the "Student-Center Facilitation" factor and "Achievement Cues" factor were also highly loaded on the "Skill" factor of the present study and on the "Skill" factors of the previous studies. The first factor, "Skill", is a more general factor when taken across teachers than across students.

In summary, similar dimensions of teacher characteristics emerged when factors were extracted from the correlation matrix based on the inter-classroom group variation and covariation as were previously obtained by a factor analysis combining intra- and between-group sources of variance.

References

Isaacson, R. L., McKeachie, W. J., Milholland, J. E., Yi G. Lin, Margaret Hofeller, J. W. Baerwaldt, and K. L. Zinn.

Dimensions of Student Evaluations of Teaching. Journal of Educational Psychology, 1964. 55, 344-351.

Norman, W. T. On estimating psychological relationship: social desirability and self-report. Psychological Bulletin, 1967, 67, 273-293.

III - 4: Sex, Motives, Intelligence and Teacher Evaluations[1]

Robert L. Isaacson

The matter of student evaluation of instruction is an important topic of conversation among students, faculty, alumni and administrative officers. Tangible evidence of the importance of the topic is given by the attendance of so many distinguished faculty members at these meetings. The issues behind student evaluation of instruction are important and represent both favorable and unfavorable directions in present day higher education. More widespread use of teacher evaluation procedures can be a significant factor for the improvement of instruction if proper recognition of the limitations of the procedures is made and if proper protective techniques are established to prevent misuse of the information by administrative or other groups.

Let me suggest at the start that I believe there is merit in teacher evaluation programs and that they should be used--under certain protective conditions--and that the faculties of Universities, as well as AAUP chapters, should take active and immediate steps toward instituting such programs.

It was of interest to me that the student newspaper at the University of Michigan had in its first issue this fall an entire supplement containing course evaluations summarizing individual instructors in large, sectioned, courses and advanced courses. Despite the fact that my own ratings, and those of other instructors in the psychology department, were favorable, I believe this use of student evaluations is inappropriate for reasons which will become clear this morning, but can be summarized simply by saying that no short paragraph concerning an instructor's teaching can be accurate since the teachers are perceived differently by different students. Men and women, intellectually bright and dull students, perceive teachers in different ways, and to be honest, most teacher descriptions in a student newspaper supplement would have to be like this:

> "Astroagriculture 42: Professor Charles Predator. This course has inherent interests for students and should be exciting. Women liked Professor Predator better than did the men, but the less able students reacted more favorably than did the brighter ones. The course as taught by Dr. Predator is therefore recommended to "dull women" and to a lesser extent to "dull men." Bright men should stay away, it is not their "cup of tea."

This little example reveals some of the complexities found in careful studies of student evaluations when attention is turned toward the type of students making the rating. Nevertheless, evaluations compiled by student newspapers, or alumni groups, or administrative officers will not be so carefully analyzed and consequently will not represent adequate appraisals.

Students do hold attitudes about their teachers, and a student evalution program is important because it can provide systematic information about these attitudes. The students will have their attitudes whether we measure them or not. The question is only whether we, on the other side of the academic fence, wish to know something about them.

---

[1] Delivered at Purdue University, September 12, 1966.

Let us first consider some of the arguments used by those who wish to make use of student opinions of teachers as determined through evaluation techniques.

It is frequently argued that the presence of merit evaluations would upgrade teaching by making teachers concerned about what students will be reporting at the end of the semester. Frankly, I doubt if there would be much of a lasting effect due to this factor produced by the introduction of an evaluation program. Such an argument reminds me of similar ones used for capital punishment. In this way, the program is likely to produce no more of a lasting positive effect than capital punishment deters criminals.

Another frequently heard argument is that evaluations would allow the differential rewarding of exceptional teachers. Here the issue turns on the question of what is exceptional teaching. There are several possible definitions of an effective teacher, among which are:

1. One popular among students.
2. One popular among "evaluators," that is colleagues in the department or college, or supervisors in a teacher-training program.
3. One who is effective in terms of student accomplishment.
4. One who is effective in altering conduct, department, attitudes, or other intangible characteristics of their students.

The pro-side of the evaluation argument must assert that the techniques which will be used for evaluation will be competent to discriminate among teachers on at least one of these attributes, and that the administrative sections of the college or school will use this information to reward the desired characteristics. However, it is doubtful if any present evaluation device exists for the last two of the four criteria of effective teaching. These variables are particularly difficult to describe, let alone measure. To be sure, deportment can be measured in terms of frequency counts of "good conduct medals," "gold stars," or--at the other extreme--jail terms or truancy reports. Yet there is some question in my mind as to whether a college teacher, meeting students but a few hours a week, will be able to make much of a dent in student character. It even would be remarkable if a college teacher could make much of a permanent change in his students' attitudes about subject matter in these few meetings. Moreover, there is some question as to whether he should try to induce attitude-change about other things than the specific material of his course.

From some teaching fellows, and recent Ph.D.'s, one can learn that the effectiveness of a teacher only can be determined by the extent to which students "blow their cool." In case you are interested, a student who "blows his cool" is one who has broken through a socially induced, protective shell (which normally is responsible for cool) and has reached a level of involvement where his behavior reflects only his immediate concern over the problems presented by course or society's inequities, and not socially acceptable behavior. I doubt if student evaluation forms will help much in accurately measuring cool-blowing-ness.

It is possible, at least in theory, to obtain measures of classroom dimensions related to student accomplishment, our third criterion of effective teaching. Unfortunately, this is an uncommonly difficult job. It is so difficult, in fact, that I doubt whether the majority of the schools or departments which undertake evalution programs would really attempt to measure this variable after sober reflection of the problems. If they did attempt evaluation of student accomplishment, I predict the majority would not do it effectively. Actually, the relatively low correlations obtained in our own work among different measures of student accomplishment, after about seven years of hard work with strong support and good facilities, suggest that student gains occur along many independent dimensions.

Obviously, academic grades do not suffice as a criterion. They are awarded on the basis of overall student performance. Grades are sometimes based, justifiably, upon intangibles, and even when a "common final examination" is used in large courses we must recognize that different teachers have emphasized different material during the term. A "common examination" differentially taps areas emphasized by different instructors.

If it is assumed that a satisfactory criterion of student accomplishment could be developed, then one could determine, student by student, section by section, which teachers had students with the greater gains, but this has nothing to do with student evaluation instruments. Only a few of the dimensions we have found by thorough analyses of student evaluations were correlated with student accomplishment measured in any way. The items in such scales had differential effectiveness for men and for women. There is some evidence that correlates of actual accomplishment will be different for different subject matter in the same academic area. Therefore, it is conceivable that an administrator given the task of awarding correlates of student accomplishment obtained from evaluation instruments would have to decide whether to reward teachers with characteristics associated with accomplishment by men or by women.

Actually the situation is worse than this. We have evidence that students with specific kinds of motives do best with certain kinds of instructors and in classes organized in certain ways. Therefore, the administrative decision could be as difficult as deciding that rewards should be given to instructors who improve performances of students of type X, but not be given to instructors for their improvement of students of types Y and Z.

In addition, it must be recognized that an important variable going into any effective personality description is intellectual ability. Much of our work indicates that students of different ability respond selectively to the classroom dimensions. Would it be better to reward teachers who stimulate the brighter students or the duller?

All of this is but to say that the important teacher characteristics that have been measured do not indicate blanket, overall effects on students. On the contrary, teachers tend to produce positive or negative effects on highly specific sets of students when performance measures are used.

This brings us to a discussion of the first criterion of effective teaching. If student evaluations are generally used, it is likely they will measure a dimension which reflects "popularity" to a great extent. Attempts to measure the other criteria of effective teaching will not be attempted or, if attempted, will likely fail. Therefore, it is my opinion that we should be aware of the merits/and demerits/of student evaluations which measure a teacher's popularity with his students.

In our experience, student questionnaires of a brief nature, or with items bearing only face validity, will produce responses which will fall upon only one factor. This same factor will account for most of the variance in situations in which more than one factor can be extracted by factor analysis. In the past we have named this factor the Teacher Skill Factor.

One interesting thing is that many of the questionnaire items which are associated with this factor are just those you would expect to describe a truly skillful teacher. Of course, there are some items on which an entertainer might receive favorable reactions, but there are many which indicate that mere showmanship is not enough. If one looks at the evaluations of teachers in broad perspective, it appears that the students distinguish "entertainment value" from "learning something." Being an accomplished ham is not sufficient to obtain good standing on this Skill Factor. In our college population effective organization, clarity, and discussion skills are important. If the teacher is interesting but shallow, this is reflected in the student opinions.

Should we be concerned that a teacher's position on our Teacher Skill Factor is not well correlated with actual student accomplishment? Naturally, we all would be happier if the correlations were easily obtained and high. Nevertheless, the methods used to measure accomplishment are far from perfect as psychological instruments. Moreover, we have no convincing evidence that the measures we use to measure present accomplishment reflect the material which will be retained over any appreciable length of time. Thus, they may lack the most important kind of validity.

On the other hand, earlier research (McKeachie and Solomon, 1958) has shown that teachers receiving favorable student evaluations are "effective recruiters"--in that students in their sections take more later courses in psychology than students enrolled in classes of teachers rated less favorably. This is at least one plus mark for Factor One--the Skill Factor.

At the very least, the Skill Factor measures the satisfaction a student receives from the course and from the instructor. While this is not all that one might wish, it is all that will likely be obtained in most situations. It is not without some further merit. Student satisfaction is important. It does relate to recruitment into later courses and when one couples this with the empirical observation that, to some degree, the students discriminate between showmanship and effective teaching, it is more than a "trivial something."

Yet, while this skill information about instructors is more than trivial it is far less than a complete description of the teacher.

Students should not be expected to give a complete evaluation of the teacher. This lies beyond their competence and range of experience. What they can do is provide information as to how "skillfully" a teacher does what they expect him to do. The mistake which is often made, and which is dangerous, is that "skill" will be taken for the "entire teacher."

Informative and intelligent use of information about this skill-factor is possible when we recognize its limits. A reasonable program must include:

1. Ways for the teacher to be able to use the information from students as feedback to adjust his techniques and organization,
2. means for comparison among courses, and
3. a method of communicating information about overall skill-effectiveness to administrators.

All of these can be accomplished without creating a situation in which the future of an individual instructor is dependent upon meager teacher-skill information provided in a brief questionnaire. I believe the following program would capitalize on the benefits of a student evaluation program and remedy many of the common faults of such programs.

1. The completed forms of an evaluation procedure in which students are anonymous are held by the clerical staff until the final grades are submitted by the instructor.
2. The instructor would study the student evaluation forms and prepare whatever summaries he might wish to make.
3. A faculty review panel, or several of them, would be established for each department or university unit so that each panel reviews both the "raw data" of the individual rating forms and the summarized results of a number of teachers at the same level of instruction.
4. The faculty member and the faculty review panel meet together to consider the particular evaluations made of the faculty member made by his students and the suggestions found in answers to the open ended questions. The panel can also provide the instructor with "base-line" information obtained in other courses of the same semester and in the same course in previous years. The panel could also provide useful suggestions for changes.
5. The faculty panel could provide summary information for the department chairman and the dean as to the state of instruction in the courses they examined and, at the same time, disguise the names, and individual course descriptions if needed, to preserve anonymity of the individual teachers.

These sets of procedures would be, I think, a meaningful and effective basis for a program for the improvement of instruction through feedback from the students. At the same time it would prevent a dean or department head from misinterpreting the results of the evaluations. I would urge that a program like it be instituted at every institution concerned with effective teaching and that it be used to supplant all programs in which either student or teacher anonymity is not guaranteed.

To this point, I have tried to point out that while many claims are made for the measurement of effective teaching through evaluation programs, student evaluations will only produce information concerning one dimension of teaching: students' opinions about the instructor's skill--and--that this should be recognized as having some merit and can be used effectively, provided appropriate protective devices are provided. Let us now explore a bit more the reasons why protective devices are required. There seem to be two kinds of important reasons: (1) the need for consideration of content of instruction, and (2) individual differences among students as they react to teachers. First: the emphasis upon the "skill aspects" of the teacher obscures differences in quality of content. What levels of qualifications can be found in college professors around the country? What differences exist within a department? What quality of information is transmitted in classrooms? We should note that it is possible to determine whether information is up to date and of value, but, it is not possible for the students to make these judgments.

Actually, informational analysis is made of college instructors. Sometimes it is called "publish or perish." The submission, and subsequent review, of articles to leading journals represents one way in which the scholar's knowledge is subjected to examination and evaluation.

Certainly, the publication of timely articles is not a sufficient criterion for evaluation of teacher competence in regard to his subject matter. For one thing, the knowledge of the prolific writer of articles may not be transmitted to his classes. Moreover, each of us knows very knowledgeable people who for one reason or other do not publish articles with regularity. However, I would bet that careful study of teachers would reveal that those who publish a reasonably large number of articles (given their individual circumstances) tend to communicate "fresher information," and perhaps more information, than their colleagues who write less. But, this is speculation and the point is that there are exceptions--truly exceptional cases, I believe--but exceptions nevertheless. Mechanisms should be instituted by administrative officers to make sure these exceptions are given their due. In any case, this is a matter about which student opinions are of limited use.

Most college administrators and others anxious to institute programs of evaluation seem worried about "skill characteristics" of teachers but not about the quality of the information transmitted. When asked about evaluations of the latter, the advocates of student evaluations tend to say "we hire good men and let them go their way," "anyone can tell so-and-so is a fine scholar merely by talking with him," or "that is absolutely untestable."

The more I reflected upon this question of quality of instruction, the more I realized that very little data was available which bears upon the matter. Therefore, I went to several fairly recent sources of information concerning educational matters and will share my results with you. As example, use my field

In 1963-64, 1,345 colleges awarded BA degrees in psychology. You may be interested that 650 schools awarded masters degrees and 212 awarded Ph.D.s in psychology. There are probably about 2,000 colleges in the country today. Psychology is probably taught at most of our 2,000 colleges. Who teaches the psychology in these two thousand colleges? What are their qualifications and what is the level of information transmitted?

I know of no good way to determine precisely the qualifications of the teachers of psychology, but it is possible to use the 1966 American Psychological Directory to piece together some information about what the situation across the country must be. While membership in the APA does not guarantee sound knowledge and scholarship, it is reasonable to assume that those belonging to the APA would, in general, be more qualified to teach psychology at the college level than those who do not belong. Members and associates of the APA must meet certain scholarly tests.

> In Alabama there are supposed to be 41 institutions of higher learning. The APA directory lists members associated with only 10 schools. In terms of percentages, 24.4% of the Alabama schools have APA members.
>
> In Florida, 48 advanced schools are given and the directory lists APA members at 16. This gives a 33% figure for Florida.
>
> In Oregon, we find 31 schools of which 13 have members of the APA. This represents about 42%.
>
> In Connecticut, there are 41 advanced schools and about 37% have APA members associated with them.

Now, I will not vouch for the absolute accuracy of any of these estimates, but I believe they are probably reasonably close to the true situation. They mean that 60% of all institutions of higher learning in the United States do not have APA members on their faculties. These figures, by themselves, suggest that there may be a real cause for concern over the information being taught in undergraduate programs.

Recently several academic areas across the country have established "Commissions" for the Improvement of Instruction at the college level. Already the Commissions for Chemistry, Physics, and Mathematics have inaugurated meaningful programs for increasing competancies of teachers. Commissions should be established in all scientific areas so that the present status of higher education can be determined in each field and appropriate corrective measures undertaken.

The point is that except where commissions have begun their work, we know very little about the qualifications of college teachers in many fields. While we should be worried about skill exhibited in the classroom, we should also be worried about qualifications, content, and the amount and quality of information transferred in the classroom. As we move away from the large universities the problem becomes more and more acute, although even at the large schools some problems may exist. Student evaluation instruments can provide certain useful feedback to the teacher but are so limited in technical matters, like information and its transfer, that they should not be used for promotions or advancement.

Turning to the second reason why protective devices must be provided is the matter of student differences in the perception of teachers. About five or six years ago, one teaching fellow I was supervising could not understand why his two classes in introductory psychology reacted so differently. One class was pleasant, task-oriented and proceeded at a well regulated pace; his other class was recalcitrant, troublesome, and became bogged down in technical details, for example, over grading or test construction. The teacher evaluation ratings collected at the end of the semester showed that his first class rated him as an effective teacher but the ratings of his second class were enough to induce suicide in all but the utterly insensitive.

We knew that both classes were atypical in that they had a preponderance of women. There were about 17-18 women in each, and only 4 or 5 men, but both classes were similarily constituted. We checked the students' previous grade point averages and test scores in both classes. The outcome was staggering! The women in the first class had an average grade point average of over 3.0 (on a 4.0 = A scale) whereas the women in the second class averaged 1.7 on the same scale. We were able to follow the same teaching fellow over four semesters. The same pattern always emerged--in that bright women always rated him as an excellent teacher, dull women rated him terribly. Men, regardless of grade point averages or test scores always gave him mediocre ratings. Think of the inequities which would have resulted if he had only been evaluated by his second class! (The consideration of data from only the first class would have been inaccurate as well, as would the evaluations which would have come from an all male class. What would a really accurate generalization be like?)

Over the past five or six years, our research using student evaluation instruments has shown that students react to teachers in almost every conceivable way. Men and women may differ in their reactions to a teacher; some teachers work well with women--others do not. Some teachers do well, or poorly, with students of both sexes. Students with different intellectual abilities find different qualities of a teacher to their liking. As but one example, the brighter students tend to prefer small discussion classes relative to lecture-oriented classes. Put another way, the less bright student prefers the traditional lecture method and its greater organization probably is of use to him. Interestingly enough, while classroom organization is probably "good" in some total sense, the National Merit Scholars actually were most influenced toward selections of majors in courses in which they did not know what to expect next. One interpretation might be that organization can be detrimental to motivation toward course material for the very bright students. If this were so, and you were the dean, how much would you value classroom organization in considering promotions?

Students with different motivational backgrounds react differently to teachers. Again, as a minor example, students who are filled with concern or fear about failure might be expected to prefer those teachers who provide structure and a known organization pattern upon which their studies can be based. To a limited extent this is true, but the same circumstances which provide organization (e.g., study sheets, brief examinations, etc.), are also suggestions as to possible failure and when too many of these failure-tainted organizational cues are presented, fear dominated students come to react very unfavorably. Motivational effects upon student evaluations are very difficult to determine, since there is a self-selection of courses which is based on the individuals' motives, to begin with. As a far-out but real example, some fear-of-failure students with low ability will elect a series of courses which are very difficult and persist in them despite repeated failure. It is as if a person elected to practice putting in front of an audience from a position 100 ft. from the cup. Of course a miss is a failure, but from 100 ft., who could blame him? Who could blame "Mary Nervous" for failure in organic chemistry, and then in Biochem?

The personal and specific motives of individual students play a role in teacher evaluation, but their role is not a simple one and one not given to easy analysis--especially in the hurried review of student evaluations that may occur by administrative officers.

The sex of the student, the intelligence of the student, and the motives of the student all play a part in determining reactions to teachers. As in life everywhere, their roles are complicated and difficult to grasp, but because they do play significant roles, as do other factors in the students of which we are not aware, there is no global teacher dimension which can be sought after and found by those who would wish to seek, identify, label, and reward teachers exhibiting it.

Any enlightened use of teacher evaluation procedures must be satisfied with much less than what is wanted. The administrators must be satisfied by descriptions of student evaluations which do not say that teacher A is superior to teacher B, the teacher must be satisfied to learn of the overall opinion of himself by students and some limited suggestions for improvement. None of us need be satisfied, however, with the state of the art of teaching or with the research into factors underlying effective teaching or evaluation. None of us need be satisfied with the content or qualifications of instruction at a national level. It is important for all of us that those who teach are those who themselves excel.

References

McKeachie, W. J. and Solomon, D. Student ratings of instructors, a validity study. Journal of Educational Research. 1958, 51, 379-382.

III - 5: Apportionment of Merit among Classroom Factors

Robert L. Isaacson

Chapters III-1, 2, 3, 4, 6, and 7 present the results we have obtained in attempting to achieve better understanding of the dimensions of students' perceptions of the classroom. From the start we should note the limitations of our work. We have used a very restricted population, a restricted set of teaching methods and instructors, and a limited, although large, number of questionnaire items. Furthermore, the items were of similar construction and were analyzed using only certain statistical methods. We have not studied exhaustively the characteristics of the individual students relative to their evaluation of course or class. In the future we will move toward more complete examination of all of these variables but even with these limitations, our studies have provided some new information. Much of it has import for questions bearing on the wider application of merit evaluations for teachers. Moreover, there is no evidence that the data from our present research efforts can not be generalized to other groups under other conditions at least at the college level. Much of what will follow is based on the assumption that our data can be generalized to other college populations. I would like to emphasize that these generalizations may not be appropriate to the primary or secondary school levels. We have some evidence that classroom dimensions obtained from grade school children are rather different from those obtained from college students.

First, let us examine some of the traditional, or at least frequently heard, points of view concerning merit evaluations of teachers and how our research bears upon them.

It is frequently argued that the presence of merit evaluations would upgrade teaching. On this our project has created no evidence. Frankly, I doubt if there would be much of a lasting effect produced by the introduction of an evaluation program where none existed before.

Another frequently heard argument is that evaluations would allow the differential rewarding of exceptional teachers. Here the question is, "What are the criteria of exceptional teaching?" Ultimately this question must be answered in terms of student learning. Only a few of the dimensions of student ratings we have abstracted through our analyses were correlated with student accomplishment. The items in such scales were not easily found and had differential effectiveness for the different sexes. It is likely that correlates of accomplishment will be different for different subject matters. Therefore, it is conceivable that an administrator given the task of awarding teacher correlates of student accomplishment obtained from evaluation instruments would have to decide whether to reward teachers with characteristics associated with accomplishment by men or teachers with characteristics associated with accomplishment by women.

Although most of our data comes from college populations, a thesis done in our School of Education by Lionel Metevier used grade school students, their practice teachers, and their college supervisors to test several hypotheses derived from our college-level work. One curious finding was that three clusters of correlations were obtained among the many evaluation techniques used. One set came from the pupils, another set came from the supervising teacher and school principal, and the third from the college supervisor. The three sets of correlations were largely independent, and between particular items from the different evaluators there were frequently negative correlations, even though measurement of the same quality was intended. This means that pupils, supervising teachers, and college supervisors used different attributes of the instructor when making their evaluations.

This observation, and others like it, are important for proper understanding of the difficulties inherent in using evaluations made by supervisory personnel. In the grade school, supervising teachers and principals tended to favor the beginning teachers who maintained a "taut ship" and a neat bulletin board. Student teachers who got their work plans in on time, and who were not a general nuisance, were positively evaluated. On the other hand, these tidy student teachers were not always favored by college seminar leaders or practicum supervisors. This resulted in an absence of correlation between the evaluations of the college supervisor and those made by the supervising teacher. The student reactions were independent of both of these sources of information.

It seems to me that the same kind of discrepancies may exist at the college level. Supervising faculty may often mistake neat course syllabi and outlines for excellent instruction. The teaching fellow or instructor who does not "rock the boat" may be judged as superior. As an aside, I sometimes wonder whether some faculty talk a better course than they teach. Often in faculty discussions we hear about the "remarkable effects" of innovations instituted by a colleague. Often this information is volunteered at luncheon or over cocktails. Usually no further investigation is made into the actual effects produced by the changes, but a myth is started or perpetuated. In any case, this kind of information, or misinformation, becomes a part of the cognitive domain of the faculty or administration. This results in a ready-made source of bias for evaluation by colleagues or supervisors.

Recently, I have heard a new twist to this propaganda-like ploy. The conversation went like this: "This new method (of instruction) has not caught on with the students. They don't like it. But, it really does work in getting the information across. They really learn with it." This view that a technique may be uncommonly unpopular yet uncommonly effective is difficult to test, since it is so difficult to determine the relative merit of any method. I am very suspicious of this kind of assertion, however, because it is so positive. It argues for a blanket effect, over all students, regardless of their personality patterns or level of intellectual ability. Most of our data suggest that few such comprehensive effects exist. Moreover, from data obtained from student evaluations it appears that students are discriminating and that unpopular courses are those in which the teacher, or his methods, are ineffective.

This brings us to a discussion of the first criterion of effective teaching, that is the popularity of the teacher with his students. If student evaluations are to be generally used, it is likely they will measure a dimension which reflects popularity to a great extent. Attempts to measure the other criteria of effective teaching will not be attempted or, if attempted, will likely fail. Therefore, it is my opinion that we should be aware of the merits and demerits of student evaluations which measure a teacher's popularity with his students.

In our experience, student questionnaires of a brief nature, or with items bearing only face validity, will produce responses which will fall primarily upon one factor. This same factor will account for most of the variance in situations in which more than one factor can be extracted by factor analysis. In the past we have named this factor the Teacher Skill Factor, or merely Factor One.

Should we be concerned that a teacher's position on our Teacher Skill Factor is not well correlated with actual accomplishment? Naturally, we all would be happier if the correlations were easily obtained and high. Nevertheless, the methods used to measure accomplishment are far from perfect as psychological instruments. Moreover, we have no convincing evidence that the measures we use to measure present accomplishment reflect the material which will be retained over any appreciable length of time. Thus, they may lack validity of the most important kind.

At the very least the Skill Factor measures the satisfaction a student receives from the course and from the instructor. While this is not all that one might wish, it is all that will likely be obtained. It is not without some merit. Student satisfaction is important. It does relate to recruitment into later courses and when one couples this with the empirical observation that, to some degree, the students discriminate between showmanship and effective teaching, it is more than a "trivial something."

I mentioned at the beginning that I doubted if a program of evaluation would have any prolonged effect, in and of itself. However, this does not mean that differences do not exist among teachers in terms of this most readily measured dimension, the Skill Factor. Given these differences, the question is whether or not they should be known. There is little doubt that the students know about them. I believe that they should be known by the individual professors involved at least. Therefore, I believe that an evaluation program using information from students is desirable even with the necessary limitations and restrictions. As I have stressed, it is my impression that only a Skill Factor will be represented. But this information is valuable. It exists in nature, in this case a part of the student body, and deserves to be known in wider circles.

While I endorse a student evaluation program, the next logical question is a very knotted, complicated one and answers to it may vary from college to college, from department to department. There is no question that each instructor should be able to know the evaluations made by his own classes. Beyond this, however, mechanisms should be established which provide reasonable safeguards for both the institution and the individual professor, so that both may profit from judicious use of the information and neither be the subject of its unfortunate or hasty misuse. Perhaps committees selected by the faculty which have both perspective and understanding might be suitable mechanisms through which the information from evaluations are considered. They could advise the administration as to the general level of instruction as well as areas of strength and weakness. They could, as well, perform a constructive role in advising their colleagues as to their position relative to other teachers and give advice for areas of improvement. Whatever the specific techniques used may be, it will be vital to have some means whereby unjust use of information will be prevented. Given an adequate form of protection, the information obtained from students evaluations can be a rich source of information to the professor, the department, the college, and the university.

III - 6: Student Ratings of Teacher Effectiveness[1]

W. J. McKeachie

Everyone evaluates college teaching, but no one knows how to do it. Campus conversations often contain phrases like "Professor Jones is great - absolutely great!" "Bill Smith is an excellent researcher but I'm afraid that he's not very effective in the classroom." "The staff of our college are unusual in their combination of high scholarship and superb teaching!"

Yet, whenever, a program for rewarding good teaching is discussed it encounters the barrier, "But how can we evaluate teaching?"

The ultimate criterion of good teaching is education. The teacher whose students make good progress toward educational goals is an effective teacher regardless of how he looks or what techniques he uses. But this straight-forward statement makes the problem meretriciously simple. The plain fact is that it is only rarely that we have defined our educational objectives clearly enough to permit measurement. Even when objectives are relatively clear, we seldom have had the ingenuity and tenacity necessary to devise adequate measures. As a result evaluation of teaching has been forced to rely upon expedients of less obvious validity. Nevertheless evidence from student behavior is still worth trying for. For example it is possible to get such evidence as student reading outside course requirements, plans for reading after completion of a course, election of advanced courses in the same field, discussion outside class of class-relevant topics, etc.

Peer or administrator ratings are other alternatives to be considered in evaluating teaching. But peers in advanced courses are more likely to note omissions than strengths, and often peer judgments are simply second hand student judgments.

That students should serve as the "experts" in evaluating the effectiveness of their instruction is a relatively new and revolutionary idea in the field of higher education. No one has doubted that students had opinions about the quality of instruction they received, but only within the past four decades have these ideas been systematically gathered. Beginning in the early 1920's, the use of formal faculty evaluation by students has grown until over half of our American colleges and universities have probably used them at one time or another (Mueller 1951). Numerous articles have been published, arguing for or against the use of students ratings. However, the research in the area is scattered, and those contemplating the use of student ratings may not realize that there are empirical answers to some of the questions they raise.

The Michigan project has had continuing interest in the use of student ratings of teacher effectiveness. In Contract No. OE 850, we established certain stable dimensions of teaching as rated by students. In the current project we have been concerned with determining the validity of the ratings in terms of the criteria of student achievement.

---

[1] This chapter is derived from a paper presented by W. J. McKeachie at the American Psychological Association meetings, September, 1965.

The validity of student ratings has been the chief bone of contention between those for and those against the use of student ratings. The problem seems to resolve itself into the question, "Validity for what?"

Almost everyone agrees that the aim of teaching is to produce changes in students. Unfortunately, the types of changes desired are seldom clearly defined or measured. The advocates of student ratings make one or both of the following assumptions:

1. One of the desirable outcomes of education is the favorable reaction of students. Stated thus baldly, this assumption seems lacking in idealism, but it might be justified with the argument that interested students are apt to continue their education both in and out of college, and as alumni and citizens to support educational activities in general. Other things being equal, one would rather have satisfied than dissatisfied students.

2. Student ratings of teaching are an index of desired student learning which the teacher or course has produced.

3. Instructor knowledge of student perceptions of his behavior may be useful in improving teaching.

Student ratings as evidence of favorable student attitudes

If one accepts as a legitimate educational objective the favorable reaction of students, ratings by students have high face validity. Validation of a teacher scale for this purpose might involve checking the scale against interviews.

The persistence of these attitudes might be assessed by comparing evaluations of students at the conclusion of a course with evaluations made several months, or even years, later. One often hears stories of the teacher a student hated until he got out and realized how much he'd learned. The Purdue data suggest that this is not generally true. The teachers rated highly by students tend to be those most highly regarded by alumni. Drucker and Remmer's research on this point (1957) shows that student ratings of instructors correlate well (.40 to .68) with alumni ratings of the same instructors.

Student ratings as evidence of attainment of educational objectives

The data on validity in terms of the second criterion -- student change -- will satisfy neither the proponents nor the opponents of student evaluation of teaching but are generally encouraging.

Elliott (1949), in a study of 36 college chemistry teachers at Purdue, failed to find significant correlations between teaching effectiveness as measured by mean student achievement and mean score on the "Purdue Rating Scale for Instructors" ($r = .239 \pm .17$). However, ratings on four of the items on the Purdue scale were significantly correlated ($P = .05$) with teaching effectiveness. They were:

1. Conduct during laboratory period (actively helpful vs. waits to be asked for assistance).

2. Attitude (liberal or narrow-minded).

3. Educational effectiveness of recitation.

4. Rating as compared to other instructors at Purdue.

One of Elliott's most interesting discoveries was that certain instructors were relatively more effective in stimulating achievement in low-ability students than in high-ability students, while other instructors were more effective with high-ability students. While the overall ratings of these two types of teachers were not significantly different, the teachers who were more effective with high-ability students were rated higher by these students than by low-ability students. Teachers who were more effective with low-ability students were rated higher by those students. These data indicate that what a student has achieved in a course is to some degree reflected in his rating of his instructor.

This conclusion is confirmed by Russell (1951) who found that as compared with under-achievers students who achieved more than would have been predicted in a class rated the course higher on contribution of text to course, fairness of examinations, and fairness of grades. Perhaps one of the reasons ratings of the course tend to be more valid than ratings of the instructor is that course ratings tend to be lower and more variable (Flesher, 1952). One might also relate student ratings to indices of student motivation. McKeachie and Solomon (1958) present some evidence that students of highly rated instructors elect more courses in the same field.

Additional research on the validity of student ratings is important both to researchers desiring measures of teaching effectiveness and to college administrators, teachers, and students interested in improving college teaching. In our studies of student ratings we have attempted first to determine stable factors of student ratings and then to relate these to teacher effectiveness as measured by the achievement of the teacher's students. Our approach differed from the usual one in terms of our interest in getting information about student perceptions of teacher behavior as well as some information about student evaluative reactions.

Our procedures are described in Chapter III - 1. This chapter reports some additional results on the relationship between student ratings and other measures of teaching effectiveness.

Our factor analysis had produced six stable factors: Skill, Overload, Structure, Feedback, Group Interaction, and Student-Teacher Rapport.

What do these dimensions have to do with effective teaching?

Two of the factors are significantly related to teacher effectiveness as measured by performance of a teacher's students on our Introductory

Psychology Criteria test (corrected for intelligence) (r's = .28 and .51). These were "Skill" and "Student-Teacher Rapport." Even more interesting is that other dimensions, while not related to over-all effectiveness, are related to effectiveness with particular kinds of students. The "Overload" factor, for example, relates positively to effectiveness with women students. For men, on the other hand, effective teachers were high on our dimensions of "Structure" and "Feedback."

Previously we have found that teachers who are effective as measured by student performance on an objective test are likely to be ineffective as measured by student performance on an essay test, and we have also found that "warm" teachers are relatively more effective for students high in n Aff than for those low in n Aff. Taken together our data indicated that teaching effectiveness is not a unitary concept but one involving a number of complex interactions.

When we ask "Which teachers are most effective?" we need to add further "For which objectives?" and "For which students?". But with such specifications student evaluations can provide useful evidence of teaching effectiveness.

References

Drucker, A,J, and Remmers, H.H., Do alumni and students differ in their attitudes toward instructors? Journal of educational Psychology, 1951,42,129-143.

Elliott, D.N., Characteristics and relationships of various criteria of teaching. Ph.D. thesis. Purdue University, 1949.

Flesher, W.R. Inferential student rating of instructors. Educational Research Bulletin. 1952,31,57-62.

McKeachie, W.J. and Solomon, D. Student ratings of instructors: A validity study. Journal of educational Research, 1958, 51, 379-382.

Mueller, F.J. Trends in student ratings of faculty, AAUP Bulletin, 1951, 37, 319-325.

Russell, H.E., Inter-relations of some indices of instructor effectiveness: an exploratory study. Ph.D. thesis, University of Pittsburgh, 1951.

III - 7: Observer and Student Perceptions of Teaching Behavior in French, Mathematics, and Psychology Classes

Yi-Guang Lin and Wilbert J. McKeachie

The problem of assessing teaching effectiveness has become more and more important as college students, faculty, and administration have become increasingly attentive to teaching. If colleges and universities are to reward good teaching, they need methods of evaluating it. Thus the search for valid and generally usable methods has intensified.

The purposes of this paper are: 1) to compare student and observer ratings of teaching behavior in three courses (French, Mathematics, and Psychology); 2) to compare the characteristics of teachers and teaching rated as effective by the students in three courses; 3) to determine the relationship of teaching characteristics to student satisfaction.

FIRST STUDY

Procedure

Measures

Four methods of assessing teaching behavior were employed.

I. Student Perceptions

Student ratings of teaching behavior have been increasingly utilized in recent years (McKeachie, 1957). However, the dimensions or categories of teaching behavior relevant to important student motives have not been well established or identified. We were interested in studying the effect of student need Achievement, need Affiliation, and Achievement Anxiety upon academic performance with different types of teachers. To differentiate teaching types relevant to these motives our first step was to construct an inventory consisting of items describing teacher and group characteristics theoretically relevant to these needs.

A list of twenty such items was first tried out in a sample of introductory psychology course students. Four dimensions of teaching behavior were identified by factor analysis. The three items most clearly defining each dimension were as follows:

A. Warmth (Affiliation cues) - Interpersonal warmth between instructor and class members.

1. Students in class were friendly.
2. Instructor was friendly to me personally.
3. Instructor seemed personally interested in each class member.

B. Achievement - The amount of achievement cues provided by the instructor and class.

1. Instructor set very high standard for the students.

2. Members of the class competed to do well.
3. The course work presented a real challenge to me.

C. Feedback - The amount of information about examinations and performance provided by the instructor.

1. Instructor announced examinations in advance.
2. Instructor announced before a test what kind of items would be in it; i.e., whether multiple choice, essay, etc.
3. When I spoke in class I could tell from the instructor's reaction whether what I said was right or wrong.

D. Structure - The amount of organization of content provided by the instructor.

1. Instructor put outline of the day's lecture or discussion on blackboard at the beginning of each class period.
2. Instructor made it clear how each topic fit into the total course.
3. Instructor followed an outline closely.

Each student was asked at the end of the semester to rate his course in these 12 items on a four point scale from always true through frequently true, seldom true through never true.

Student Satisfaction Scale. The items listed above are descriptive. While students might agree on whether or not an instructor behaved in a particular way, different students might not agree on whether they liked this behavior. Each student also rated for each of the twelve items his degree of satisfaction with this aspect of the class. The student was also asked to rate his instructor's general teaching effectiveness and the contribution of the course to his education on a five point scale: superior, very good, good, fair, poor.

II. Bales-Mann Observation

The utilization of trained observers in assessing group behavior and interaction has been shown to be a useful research technique in social psychology (Bales, 1950). A trained observer in the "field" can encode in detail the individual acts of the members within a behaving group.

Mann (1959) modified Bales' system for social interaction process analysis and developed eight categories of classification which seem suitable for the purpose of assessing teaching behavior in classroom situations. A brief description of the eight categories follows.

Category	Examples of Student or Teacher Acts
1. Positive support	Showing solidarity, giving help, reward and agreement, etc.
2. Tension release	Joking, laughing, showing satisfaction
3. Giving suggestion	Giving suggestion, direction
4. Giving opinion, orientation	Giving opinion, evaluation, analysis; expressing feelings, wishes, giving orientation, etc.
5. Asking question	Asking for orientation, information, repetition, etc.
6. Asking for support	"Do you see what I mean?"
7. Showing tension	Crying, leaving the room
8. Negative support	Criticizing

Since the teacher talks over half the time in typical college classes, a class may be conceived of as a social group consisting of two interesting entities -- teacher and students. The behavior of each entity can be described separately in the eight categories listed above. Our observer classified and tallied each act during an entire class period. Each class was observed two or three times.

The observers were trained by Mann in a series of special training sessions. During training proficiency of the trainees was checked against Dr. Mann's assessment over a sample of recorded behavior. The evaluation was made by plotting the number of acts in each category on binomial probability paper (Mosteller and Tukey, 1949). The observers were required to have their scoring consistently within the .05 boundary during training before their actual observation of classrooms began. The agreement between observers in the classroom was also high enough (the median r = .85) to warrant the assumption of adequate interjudge reliability.

Three composite scores were derived from the Bales-Mann data.

A. Teacher positive social-emotional support: The ratio of Categories 1 + 2 to Categories 1 + 2 + 7 + 8.

B. Teacher task: The ratio of Categories 3 + 4 + 5 to Total Scores - 7.

C. Teacher assertion: The ratio of Category 7 to Categories 4 + 5.

III. "Bales" Observer Rating

In addition to the task of encoding the individual acts according to the Bales-Mann categories, the observers, at the end of the session, rated the following six aspects of the teaching behavior of the instructor.

A. Warmth: Warmth of interpersonal relation between instructor and class.

B. Achievement: The extent to which the instructor emphasized desire for high level of performance on the part of students.

C. Structure: The degree to which the instructor "structured" the classroom situation.

D. Anxiety: The overall impression of the level of anxiety which prevailed in the classes.

E. Power: The extent, in discussion, the instructor attempted to convince students to adopt his point of view on an issue discussed.

F. Overall rating: An overall evaluation as to whether the instructor was an excellent, good, or poor teacher.

IV. "Non-Bales" Observer Rating

Each class was also visited two or three times by two or three graduate student observers without any special training who rated three characteristics of the teaching behavior: Warmth, tension, and structure. These three characteristics were described as follows:

A. Warmth: Friendliness of instructor and the tendency of the instructor to call members of the class by first name.

B. Tension: The tendency of members in the class to engage in irrelevant private conversation and to participate in irrelevant activity.

C. Structure: The degree to which the instructor put an outline of the day's lecture or discussion on the blackboard at the beginning of the period, followed the outline, summarized the day's material at the end of the period, and indicated at the end of the period what the next day's lecture or discussion would deal with.

Description of Courses and Sample

Characteristics of teaching in three different courses were investigated in the first study. One was a second year French course consisting of 16 sections, taught by 16 different instructors, with a total of 292 students enrolled. Another was an introductory mathematics course consisting of 9 sections taught by 9 different instructors. The total number of students was 260. The third course was an introductory psychology course consisting of 12 sections taught by 6 different instructors with a total of 241 students. These three courses were regular courses offered by the College of Literature, Science, and the Arts at the University of Michigan.

Mean ratings and scores on the various scales were used as measures for each section. The sample size for each course was therefore the number of sections; i.e., 16, 9, and 12 for French, Mathematics, and Psychology courses respectively.

Results

I. Relationship of the different assessment methods.

Tables 1, 2, and 3 show the relationships among the three methods of measuring Warmth and Structure in the three courses. In these Tables the rank order of correlations should be (from high to low)

1. monotrait - heteromethod (e.g., Bales warmth x student warmth)
2. heterotrait - monomethod (e.g., Bales warmth x Bales structure)
3. heterotrait - heteromethod (e.g., Bales warmth x non-Bales structure)

For "Achievement Cues" we have data only from the Bales-Mann observers and students (See Table 4). As the Tables indicate our results are spotty. For the French course, the only significant correlation occurred between the student perception and the non-Bales observer's rating of Warmth (r = .56). For the Mathematics course, significant agreement between methods on the same characteristics occurred only on Achievement Cues (r = .66 between the student rating and Bales observer rating). For the Psychology course, some degree of agreement was indicated between the student perception and the non-Bales observer's ratings on warmth (r = .61) and between the student perception and Bales observer's ratings on Achievement Cues (r = .66). Although the correlation coefficients are not spectacular, reasonably good agreement between observers and students is found on Achievement Cues considering the low reliability of single item scales. For Warmth, the agreement is also good except for the ratings by the Bales observers in Mathematics. The ratings of Structure are not in good agreement.

Table 1

Correlation Coefficients among Three Kinds of Ratings of Two Characteristics in French Course (N = 16 sections)

		Warmth			Structure		
		Bales	Non-Bales	Student	Bales	Non-Bales	Student
Warmth	Bales		.34	.20	.38	-.09	-.05
	Non-Bales			.56*	-.25	-.09	.26
	Student				.02	.02	.38
Structure	Bales					.01	.19
	Non-Bales						-.05
	Student						

*Significant at the .05 level.

Table 2

Correlation Coefficients among Three Kinds of Ratings of Two Characteristics in Mathematics Course (N = 9 sections)

		Warmth			Structure		
		Bales	Non-Bales	Student	Bales	Non-Bales	Student
Warmth	Bales		-.15	-.19	-.32	-.02	.04
	Non-Bales			.39	-.41	.00	-.18
	Student				.01	.01	.45
Structure	Bales					-.17	.28
	Non-Bales						.54
	Student						

Table 3

Correlation Coefficients among Three Kinds of Ratings of Two Characteristics in Psychology Course (N = 12 Sections)

		Warmth			Structure		
		Bales	Non-Bales	Student	Bales	Non-Bales	Student
Warmth	Bales		.39	.38	-.34	.47	.07
	Non-Bales			.61*	-.36	-.14	-.08
	Student				-.10	-.15	-.07
Structure	Bales					-.36	.12
	Non-Bales						-.19
	Student						

*Significant at the .05 level.

Table 4

Correlation Coefficients between Student Ratings and Bales Observer Ratings of the Same Characteristics

Characteristic	Courses		
	French (N=16 sections)	Mathematics (N=9 sections)	Psychology (N=12 sections)
Achievement Cues	.17	.66*	.66*
Overall Rating of Instructor	.08	.75*	.21
Overall Rating of Course	.01	.69*	.09

*Significant at the .05 level.

The teacher positive social-emotional support index was expected to correlate positively and significantly with Warmth as measured by our three rating techniques. The results shown in Table 5 are that none of these correlations was significant and two fairly large ones were in the negative direction(r = -.51 between teacher positive social-emotional support and non-Bales Warmth in the Mathematics course and r = -.45 between the index and Bales observer rating of Warmth in the Psychology course).

Table 5

Correlation Coefficients between the Bales Teacher Positive Social-Emotional Support and Three Kinds of Ratings of Warmth

Rating Method	Courses		
	French	Mathematics	Psychology
Student	-.07	-.10	-.18
Bales Observer	.46	.28	-.45
Non-Bales Observer	.17	-.51	.07

II. Teaching Characteristics Related to the Ratings of Effectiveness

Tables 6 and 7 show the correlation coefficients among teaching characteristics and ratings of effectiveness.

Table 6

Relations among Student Perceptions, Satisfaction, and Their Ratings of Teacher Effectiveness and Course Value

		Satisfaction				Overall	
		Warmth	Ach	Fdbk	Str.	Instr	Cse
French (16 Sections)	Perception						
	Warmth	.90**	.50*	.53*	.41	.65**	.40
	Achievement	.52*	.79**	.35	.35	.59*	.28
	Feedback	.41	.19	.75**	.49	.23	.16
	Structure	.32	.57*	.84**	.79**	.58*	.49*
	Overall						
	Instructor	.63**	.89**	.65**	.78**		.79**
	Course	.42	.62**	.53*	.76*	.79**	
Math (9 Sections)	Perception						
	Warmth	.94**	-.44	.30	.51	-.10	.08
	Achievement	.36	.14	.30	.55	.22	.44
	Feedback	-.06	.23	-.13	-.35	.70*	.54
	Structure	.46	-.08	.67*	.86**	.64	.76**
	Overall						
	Instructor	-.02	.29	-.31	.67**		.82**
	Course	.29	.64	-.09	.79**	.82**	
Psych (12 Sections)	Perception						
	Warmth	.70*	.58*	.51	.48	.69*	.37
	Achievement	.49	.93**	-.24	.69*	.94**	.82**
	Feedback	.18	-.36	.83**	-.12	-.37	-.39
	Structure	.22	.14	.07	.62*	.28	.38
	Overall						
	Instructor	.56	.83**	-.11	.76**		.69*
	Course	.55	.74**	-.01	.77**	.69*	

*Significant at the .05 level.

**Significant at the .01 level.

Table 7

Correlation Coefficients between Teaching Characteristics and Three Criteria of Teaching Effectiveness (a)

French Course (N = 16 Sections)

	Student Ratings			Bales Overall
	Warmth	Instructor	Course	Rating
Non-Bales Warmth	.56*	.11	.04	.42
Student Rating Warmth		.65**	.40	.27

Mathematics Course (N = 9 Sections)

				Bales Overall
	Achievement	Instructor	Course	Rating
Bales Rating Achievement	.66*	.14	.14	.39
Student Rating Achievement		.22	.44	.65
Bales Overall Rating	.65	.75*	.69*	
Bales Rating Structure	.26	.72*	.57	.48
Non-Bales Rating Structure	.11	.38	.28	.28
Student Rating Structure	-.08	.64	.76*	.30

Psychology Course (N = 12 Sections)

				Bales Overall
	Warmth	Instructor	Course	Rating
Non-Bales Rating Warmth	.61*	.25	.06	.30
Student Rating Warmth		.69*	.37	.24
	Achievement	Instructor	Course	
Bales Rating Achievement	.66*	.65*	.50	.14
Student Rating Achievement		.94**	.82**	.13

*Significant at the .05 level.

**Significant at the .01 level.

(a) Student ratings of instructor and course, Bales overall rating of teacher.

A. French Course

For French students the four dimensions apparently were perceived as desirable so that there were generally positive correlations between perception of a characteristic and satisfaction with it and with rating of overall instructor effectiveness. However, student satisfaction ratings did not significantly correlate with the Bales indices, Bales observer ratings or non-Bales ratings.

B. Mathematics Course

In Mathematics, on the other hand, only two dimensions of student perception ratings, Warmth and Structure, were significantly correlated with student satisfaction on the same characteristics and only Structure and Feedback ratings were correlated with ratings of teaching effectiveness and course value.

Student ratings of overall instructor effectiveness were also significantly correlated with the Bales observer's rating of Structure (.72) and with the Bales index of teacher positive social-emotional support (.74). Student satisfaction with Structure was negatively related (r = -.78) to the Bales observations of level of anxiety in the class. Thus Structure seems to be a more salient differentiating feature of Mathematics classes than of French classes. As Table 8 indicates, Mathematics classes were rated by students as being low in Structure as compared with ratings by the students in Psychology and French. We are inclined to doubt that this rating is an objective description of the differences between the courses. Rather we suspect that it indicates the students' higher expectations of Structure in Mathematics. In Mathematics Bales observer's overall ratings of teacher

Table 8

Mean Student Ratings of Four Characteristics in Three Courses

Characteristic	Course			
	French (N = 16 Sections)	Mathematics (N = 9 Sections)	Psychology (N = 12 Sections)	F-Value
Warmth	1.93***	3.48	1.58	18.09**
Achievement	3.27	2.78	3.13	1.68
Feedback	1.59	2.29	1.49	6.82*
Structure	5.52	5.59	4.58	5.39*

*Significant at the .05 level.
**Significant at the .01 level.
***Low score indicates high rating.

effectiveness were in agreement with student ratings of teacher effectiveness (r = .75).

C. Psychology Course

For Psychology student satisfaction with teacher characteristics were as in French, highly related to student perception of the same characteristics. Teachers rated as effective were rated by students high on Warmth and Achievement Cues and and rated high by Bales observers on Achievement Cues and Power.

Despite agreement between student and observer ratings on several aspects of Psychology classes, there was only low agreement between the student ratings of instructor and Bales observers' overall ratings of instructors (r = .21).

Discussion

What did this study tell us?

With respect to our question about agreement between students and observers the results are inconclusive. There is some agreement; in general the student ratings correlate better with observer ratings than the observers do with one another. It seems probable that the observer ratings would increase in reliability and validity as the number of observations increased, but in a situation in which practical circumstances limit the possibility of extended observation by non-class members, student ratings are likely to be the method of choice.

We were also interested in determining whether or not training in detailed observations of the classroom would facilitate or interfere with the overall assessment of general characteristics of the teacher. Using student ratings as a criterion the untrained observers were more valid than the Bales observers in rating teacher Warmth, but the ratings of Structure do not favor either.

The most interesting result of this study was the finding that different teaching characteristics were related to perceived effectiveness in three courses.

For the French course, student perception of Warmth, Achievement Cues, Structure and Feedback correlated significantly with student ratings of the overall value of the course and instructor.

For Mathematics only Structure, as rated by both students and Bales observers correlated significantly with student ratings of instructor effectiveness and course value.

For the introductory Psychology course, the characteristics of Warmth and Achievement Cues were related to teaching effectiveness.

SECOND STUDY

Procedure

The second study was intended to extend the first study in the Psychology Course.

Measures

I. Student Ratings

A student rating form with 46 items was completed by students at the end of the semester. Ratings of six teaching characteristics were derived from the items listed below.

A. Achievement Cues

1. He maintained definite standards of student performance.
2. He told students when they had done a particularly good job.
3. He criticized poor work.

B. Anxiety Cues

1. He continuously emphasized grades.
2. By the way he acted, he made the students feel afraid of him.

C. Structure

1. He followed an outline closely.
2. He had everything going according to schedule.
3. He planned the activities of each class period in detail.

D. Feedback

1. He announced exams in advance.
2. He told a student when he had done a particularly good job.
3. He explained the reasons for his criticism.
4. He complimented a student on his work in front of others.

E. Power Cues

1. In his class, I felt free to express my opinion.
2. Students argued with one another or with the instructor, not necessarily with hostility.
3. The students frequently volunteered their own opinions.

F. Affiliation Cues
1. He (instructor) was friendly.

II. Bales-Mann Observation

The same categories described in the First Study (p. 3) were used to classify teacher and student acts in the classroom. The only change was that the categories of "giving suggestion" and of "giving opinions and orientation" were combined into a single category because of the low frequency of acts in them. Each class was observed by two or three observers simultaneously over two or three sessions.

III. Non-Bales Observer Rating

Two or three non-Bales observers observed two or three sessions of each class and rated each class on a 43-item rating form including the relevant Student Rating items and also the following general items.

1. Overall rating of Achievement Cues.
2. Overall rating of Affiliation Cues.
3. Overall rating of Power Cues.
4. Overall rating of Anxiety Cues.

The non-Bales observers also rated the instructor's general (all-around) teaching ability and the value of the course to the students in terms of knowledge imparted by the instructor. These two ratings were used as criteria of teaching effectiveness.

Sample

The sample of the second study consisted of 34 sections of an introductory Psychology course at the University of Michigan.

The major purposes of the study were the same as that of the first study, i.e., to find the amount of agreement between the different assessment techniques and to identify the teaching characteristics rated as effective by students and observers.

Results

Table 9 shows the correlation coefficients between the student ratings and non-Bales observers' ratings on the same characteristics. The only significant correlations occurred in the rating of Affiliation Cues, "Students in class were friendly," and two other characteristics, namely, "Instructor invited criticism of his acts," and "Instructor explained clearly and to the point." The results taken with those of the earlier study suggest that Warmth is quite consistently detected by both students and observers in an introductory Psychology course. For other characteristics, there is little agreement.

What teaching characteristics are rated as effective by students and observers in an introductory Psychology course? As Table 10 shows, within each group of raters separately, Achievement Cues, Warmth, Feedback Cues, and student assertion were significantly correlated with ratings of instructor effectiveness and course value. These results were generally consistent with those found in the first study.

Table 9

Correlations between the Measures of Student Rating
and Non-Bales Observer Rating of the Same Characteristics
(N = 34 Sections)

Characteristics	r
Achievement Cues	.26
Anxiety Cues	.28
Affiliation Cues (Warmth)	.60**
Power Cues	.23
Students in class were friendly	.52**
Students frequently volunteered their own opinion	.34
Students argued with each other and instructor but not necessarily with hostility	-.06
Instructor invited criticism of his acts	.37*
Instructor was friendly	.34
Instructor had everything going on schedule	.01
He was aware when students failed to keep up	.13
Instructor explained clearly and to the point	.48**
Instructor decided in detail what should be done and how	-.24

*Significant at the .05 level.

**Significant at the .01 level.

Only the "Tension release" category of Bales-Mann teacher acts was significantly correlated with student ratings of teacher effectiveness and course value. Three other significant correlations occurred between non-Bales observer ratings of course value and Bales-Mann categories of teacher acts. Two of these, however, were in the direction opposite to what we expected. We thought there should be a positive correlation between "positive support" of teacher and ratings of course value and a negative correlation between "showing tension" and course value. The results were just the opposite. The third significant correlation, -.42 between Negative Support and course rating, was in the direction we had anticipated.

Table 10

Intercorrelations between Different Teaching Characteristics and the Ratings of Teaching Effectiveness in Psychology Course (N = 34 sections)

	Student Rating		Non-Bales Observer Rating	
Student Rating	Instructor	Course	Instructor	Course
Achievement Cues	.50**	.36*	.42*	.44*
Affiliation Cues	.62**	.59**	.29	.36*
Anxiety Cues	-.51**	-.46**	-.30	-.26
Structure Cues	.10	.08	-.08	-.06
Feedback Cues	.45**	.41*	.50**	.46**
Student Assertion	.53**	.43*	.20	.39*
Non-Bales Observer Rating				
Achievement Cues	.28	.18	.31	.57**
Affiliation Cues	.30	.29	.30	.34
Anxiety Cues	-.30	-.29	-.44*	-.53**
Power Cues	.38*	.19	.09	.11
Instructor	.45**	.28		
Course	.38*	.18		
Bales-Mann Category of Teacher Acts				
Positive support	-.03	.05	-.31	-.37*
Tension release	.41*	.46**	.11	-.08
Giving suggestions, opinions, orientation	.07	.10	-.16	-.04
Asking questions	-.02	-.09	-.02	.01
Asking support	.17	.19	-.31	-.30
Showing tension	-.28	.02	.24	.35*
Negative support	.18	.15	-.19	.42*

*Significant at the .05 level.

**Significant at the .01 level.

Discussion

Do different methods of assessing teaching characteristics agree? Our results are not conclusive. While agreement was fairly consistent on teacher warmth it was less so on other characteristics. The relative merits of utilizing students and observers must thus be argued on the basis of logic rather than data.

The advantage of relying upon students to evaluate teaching is that student ratings may be more reliable by virtue of the sheer number of observations. Usually, too, it is impractical to have observers present at every class session, as students are. In our studies we used both evaluative and descriptive rating items. If students are to be used as evaluators of effectiveness one encounters the problem that students may have goals and expectations different from those of the instructor (or the university) and differing from one student to another. These differences reduce both agreement and validity of these ratings. Moreover students are not usually in a good position to evaluate the content of the teaching.

The chief disadvantage of utilizing outside observers to evaluate teaching is that observation every day is expensive and may be disruptive. Occasional observation, as in our studies, may be unreliable and even more disruptive.

It is clear that the student is a motivated observer. What might seem to an observer a succinct and appropriate answer to a question may affect the student as a curt rebuff to an attempt to obtain a closer personal relationship. Part IV of this report develops at length the importance of the affective aspects of classroom interactions. We believed that be separating descriptive and evaluative aspects of teacher rating we might increase our understanding of what goes on and what aspects of teacher behavior are most likely to be distorted by the differing sets of students and observers. We now see this task as requiring more sensitive and reliable measures than those used in this study, and Part IV will describe another approach to the same problem.

At this point, however, it is worth remarking that whether or not student perceptions are distorted by the students' personal involvement, it is still worthwhile to know what they are; in fact, it might be argued that what the teacher does objectively is less important than what students perceive him as doing. In any case our findings (See Chapter III - 6) support the notion that student perceptions of teachers are related to teacher effectiveness as measured by student achievement.

What kind of teacher do students perceive as being effective? The results of our first study indicate that there is some difference between courses. For Psychology and French classes Warmth and Achievement Cues are consistently positively related to overall effectiveness of teachers and these results were replicated for Psychology teachers in this second study. These results also fit well with our earlier study (Isaacson, et al., 1963) in which "Agreeableness" and "Culture" as rated by fellow teachers related positively to student ratings of effectiveness.

The criterion problem is a persisting one. While we have gained some evidence that student ratings of effectiveness are related to "harder" criteria of performance we wish for more. For one thing, our criteria should include long-term as well as short-term effects on students. The impact of a course on a student's later learning must be prominent among them.

One neglected but important criterion is the effects on the teacher. A teacher's satisfaction with his class and teaching and his own personal and professional growth and development should also be included as one of the criteria for evaluating teaching effectiveness. Learning and teaching are reciprocal interacting processes. The self-concept of a teacher as a competent and valuable teacher depends on the evaluation of his students and his colleagues as well as on his own perception of his role in teaching. Learning by teaching is just another example of the principle of learning by doing.

Summary

1. Some agreement was found between different methods of assessing teaching characteristics.

2. An index of teacher positive social-emotional support based on Bales-Mann categorizations of teacher and student acts did not correlate significantly with three other measures of teacher warmth. In general, Bales-Mann categories of teacher acts were not related to student-rated or observer-rated effectiveness.

3. Student ratings of satisfaction with Warmth, Achievement Cues, Structure and Feedback in their teachers were found to be significantly and fairly highly related to student perception of occurrence on those characteristics, in the same teacher.

4. There was little agreement between student ratings of instructor effectiveness and of course value and observer's overall rating of teacher effectiveness.

5. Differences between courses in teaching characteristics related to rated effectiveness were found. In French classes, student ratings of Warmth, Achievement Cues, Structure and Feedback were positively related to student satisfaction. Likewise, in Psychology high ratings for Warmth and Achievement Cues went along with highly rated effectiveness. For Mathematics students the characteristics of Structure seemed most important.

References

Bales, R. F. Interaction process analysis: A method for the study of small groups. Cambridge, Massachusetts: Addison-Wesley, 1950.

Isaacson, R. L., McKeachie, W. J., and Milholland, J. E. Correlation of teacher personality variables and student ratings. Journal of Educational Psychology, 1963, 54, 110-117.

McKeachie, W. J. Student ratings of faculty: A research review. Improving College and University Teaching, 1957, Winter, 4-8.

Mann, R. D. The relationship between personality characteristics and individual performance in small groups. Unpublished doctoral dissertation, University of Michigan, 1959.

Mosteller, F. and Tukey, J. The use and usefulness of binomial probability paper. Journal of American Statistical Association, 1949, 44, 174-212.

The Psychological Record, 1966, 16, 137-144.

III-8: PERSONALITY, SEX, SUBJECT MATTER AND STUDENT RATINGS

RICHARD E. CARNEY
California Western University[1]

WILBERT J. McKEACHIE
University of Michigan

Student attitudes toward psychology were assessed periodically during several psychology courses. Independent variables studied were whether subject matter was Science-oriented or Life-oriented, whether the course itself or topics were rated, sex of students, and two personality measures derived from the California Psychological Inventory-Achievement-Orientation (AO) and Social-Orientation (SO).

Life-oriented content consistently produced higher ratings of courses and subject matter than did Science-oriented content. Females rated Life-oriented *topics* higher than males, and males rated Science-oriented topics higher than females. Nevertheless, males rated the *course* as more valuable than females during the Life-oriented portions of the course, and females rated the course higher than males during the Science-oriented parts of the course. Inconsistent relationships were found between the personality measures and other variables.

A common dilemma of teachers of introductory psychology is that of finding a balance between the "science" and "life" aspects of the course. This study is concerned with differences between students in reactions to these aspects of psychology courses. Some understanding of these reactions may be helpful in improving our effectiveness in teaching a balanced course.

Fuchs, Klare, and Pullen (1957) have shown that science topics are regarded as unfamiliar, uninteresting, hard to understand, and generally less useful when compared to life topics.

Individual differences. Two traits of personality were measured: Achievement-Orientation (AO), and Social-Orientation (SO) (Carney, 1961). AO indicates the degree to which a person describes himself as dominant, independent, and achievement motivated. SO reflects the level of socialization and conformity attributed to oneself. These and similar personality measures have shown promise of usefulness in the analysis of classroom behavior (Carney, 1961; McKeachie, 1961). Those high in AO are more apt to control their perceptual environment (Carney, 1963). Patterns of scoring by religious groups also suggest

---

[1] Formerly at Drake University and Indiana University. Data were collected at the University of Michigan and at Drake University. The Michigan data were collected as part of a larger project sponsored by the U. S. Office of Education, Contract No. SAE-8451 to W. J. McKeachie, J. E. Milholland, and R. L. Isaacson.

that groups traditionally more identified with intellectual endeavors are highest in AO (Carney & McKeachie, 1963). A working hypothesis was therefore adopted that students high in AO would be more favorable to science topics than students high in SO. Problems of personal and social adjustment (Life) should be most favored by those high in SO.

Common folklore leads one to expect that females should be less interested in science subjects and more interested in life subjects than males (Anastasi, 1958, ch. 14), and interactions between sex, subject matter, and personality may also be expected (McKeachie, 1961).

Measures of attitude. In some psychology courses students were asked to rate the instrumentality of a topic or course toward understanding human behavior. Instrumentality judgments do not directly give an indication of positive or negative affect, but probably do reflect such affect (see Fuchs, *et al*, 1957). Instrumentality judgments were chosen since the understanding of human behavior is a declared goal of psychology, and since a goal-oriented rather than a generalized affective rating seemed more likely to relate to personality measures which reflect goal-oriented behavior. Students high in AO were expected to perceive science content as more instrumental than life content to understanding, due to a history of success and experience in using "objective" operations on the physical environment to reach their goals, and a similar reasoning applies to those high in SO and life content.

A measure of the "value" of the courses was also taken. This provided an opportunity to extend findings over rating procedures as well as schools, instructors, and courses.

PROCEDURE

Sample

Table 1 presents the courses, institutions, and numbers of students and instructors included in the sample. Students were principally freshmen and sophomores from the University of Michigan and Drake University. A more complete description of the sample may be found in McKeachie (1961) and Carney (1961), Carney and McKeachie (1963).

Course Descriptions

Introductory psychology. Both the 1957 and 1958 courses at the University of Michigan studied intensively were taught by Carney using both lecture and discussion groups for each course. The lectures, tests, and other course procedures were handled in the traditional manner, but the discussions were student-centered. Both were comprehensive courses covering the entire text by Morgan (1956).

The introductory course at Drake in 1960 was the life-oriented course suggested by Morgan (1956). This course and the personality course (following) were taught by the same instructor (not Carney) using lectures and films.

Personality. In the personality course emphasis was strongly placed on systematic analysis and the empirical problems in the area. Students were required to do a "self-analysis" paper, but the aim was to make more concrete the concepts of the course rather than to produce therapeutic effects.

TABLE 1

DISTRIBUTION OF THE SAMPLE

	Instructors	Males	Females
University of Michigan, 1957*			
Intro. psychology	6	66	129
University of Michigan, 1958			
Intro. psychology	1	21	24
Drake University, 1960			
Intro. psychology	1	24	23
Educational psychology	2	10	50
Pupil adjustment	1	23	17
Personality	1	17	19
Total	12+	161	262

*Courses in French and mathematics were also included in the total 1957 study but are not reported here.

+Only 8 instructors actually participated. One instructor taught 4 courses and one taught 2 courses (see text).

Education. "Pupil adjustment" and one educational psychology course were taught by Carney. Another instructor taught the other educational psychology course and also the combined sections for the latter part of the semester. These educational psychology courses were identical in text and approach. Great emphasis was put on the principles of measurement, individual differences, and learning. The pupil adjustment course was elected exclusively by graduate students in education, and focused on the origins of and solutions available to typical problems of adjustment in the classroom.

Measures of student attitude

All ratings of student attitude toward course and content were identified only by code number while the courses were in session and the students were assured that the ratings could have no effect on their grades.

Topic ratings. When the subject matter topics were rated the question asked was: "How much does the study of__________ contribute to the understanding of human behavior?" The content just presented in a course served to define the topic to be rated and the ratings were taken periodically throughout the courses. Since the same students made the ratings at each point in the course, a practice effect could be confounded with differing attitudes toward different content. To control this differing orders were used.

Classification of topics as science or life-oriented may be found in the table headings.

Course ratings. In some psychology courses the procedure was identical to that for the topic ratings except that "this course" was the object of an additional rating. Students were instructed to evaluate the entire course to date including lectures, discussions, and tests, and were cautioned not to limit their rating to the particular subject matter at hand. This distinction was sharpended in some cases by rating sequentially both the topics and the course. An initial rating of "psychology" was made in some classes during the first few class meetings, and provided a measure of the initial attitude toward psychology.

Personality measures

The California Psychological Inventory (Gough, 1957) was administered to students, and two cluster scores were obtained.

Achievement-orientation. The Achievement-orientation (AO) score is the sum of the standard scores on the Dominance (DO), Capacity for status (Cs), Sociability (Sy), Social presence (Sp), and the Self acceptance (Sa) scales.

Social-orientation. The Social-orientation (SO) score is the sum of the Sense of well being (Wb), Responsibility (Re), Socialization (So), Self Control (Sc), Tolerance (To), Good impression (Gi), and Achievement via conformance (Ac) scales (Carney, 1961).

Analysis

Analysis of variance and other statistical procedures were carried out according to Edwards (1958, 1960). For some comparisons students were jointly classified on the AO and SO scales by using the median to form high and low groups on each scale (*e. g.* Group 1: High AO, High SO; Group 2: High AO, Low SO, etc.). The median was computed separately for males and females.

RESULTS AND DISCUSSION

Results. Figure 1 presents the means and Table 2 the variances of the instrumentality ratings from the initial course to be observed. These findings set the general pattern and will be the only ones presented in detail.

Both the course and topic ratings rose as the material became more life-oriented ($F=55.99$, 5/330 df, $p<.01$). The topics were rated

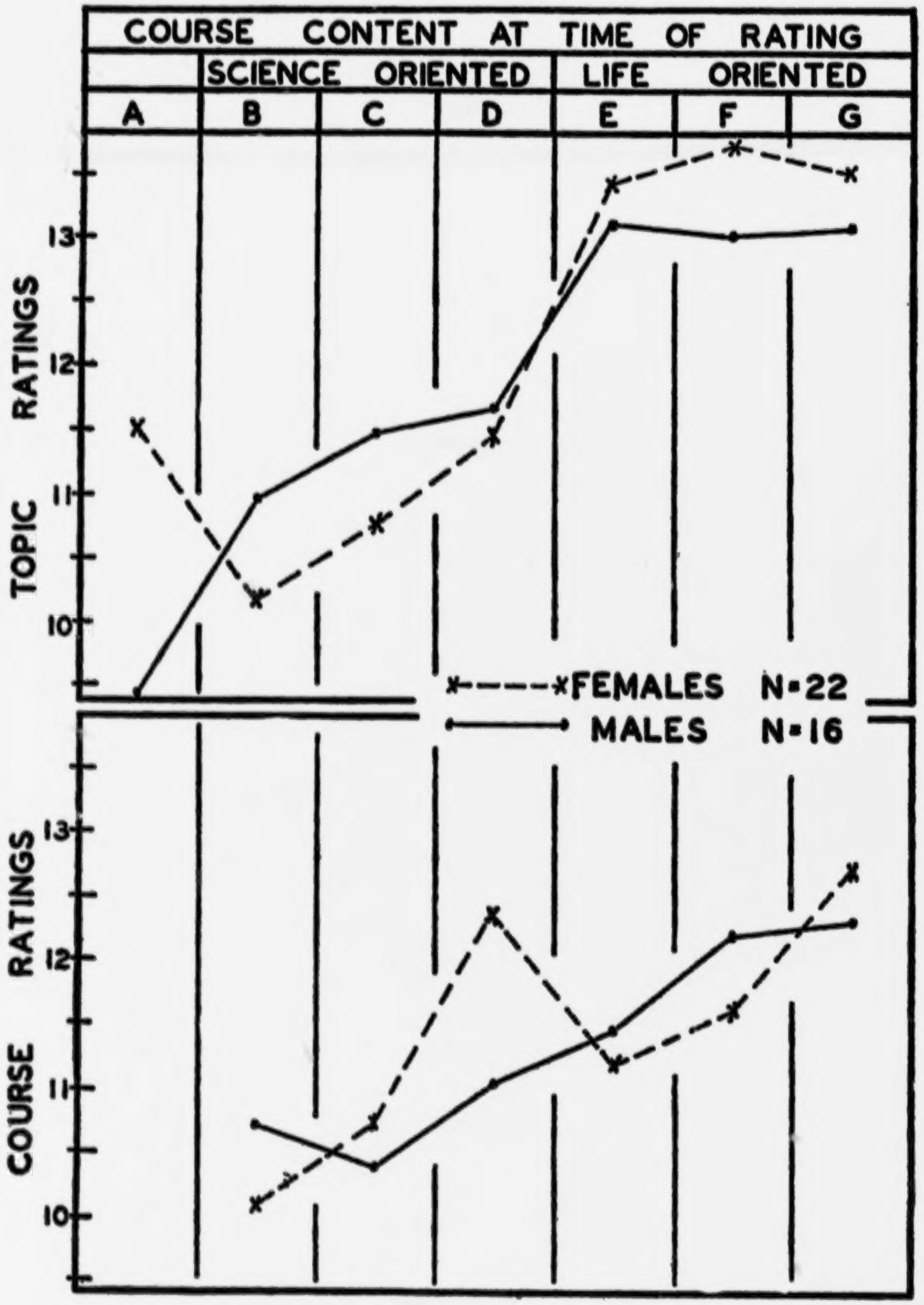


Fig. 1. Mean ratings of introductory psychology topics and course procedures (University of Michigan, 1957). Vertical scale is mean centimeters from low end of rating scale. Course content rated was: A—initial rating of psychology, B—Science and measurement, C—Biological background, D—Knowing the world, E—Principles of behavior, F—Personality and adjustment, G—Social forces.

higher than the course (F=67.46, 1/330 df, p<.01), and the topic ratings (the Ratings X Contents interaction, F=7.31, 5/330 df, p<.01). Over all ratings combined there was no difference in the means for males and females. However, there were interactions between sex and other variables. As can be seen in Figure 1, females rated the life topics higher than the males, and the males rated the science topics higher, but this pattern tended to be reversed on the course ratings (the Sex X Ratings X Content interaction, (F=51.63, 5/330 df, p<.01).

Discussion. The expected higher rating of life-oriented topics was evident and is most clearly shown when the ratings are directed to the course content proper. Ratings of the course in general also reflect the type of material presently being studied. Rank order correlation between the two types of ratings was .45 (p<.01).

TABLE 2

VARIANCE OF COURSE AND TOPIC RATINGS
(MALES, n=16; FEMALES, n=22. UNIVERSITY OF MICHIGAN, 1957

		Course content at time of rating		
		Science-Oriented		
Type of Rating	None Psychology in general	Science and measurement	Biological background	Knowing the world
Topic Rating				
Males	....	9.58	6.11	3.79
Females	....	13.97	5.36	7.38
Course Rating				
Males	8.12	5.79	7.03	4.38
Females	8.23	5.66	4.85	6.50
Total	8.14	8.80	5.69	5.53
			Life-Oriented	
		Principles of behavior	Personality & adjustment	Social processes
Topic Rating				
Males	....	2.23	3.04	3.37
Females	....	1.04	.72	.60
Course Rating				
Males	....	3.79	2.08	3.50
Females	....	6.80	5.80	2.37
Total	....	4.42	3.45	2.42

Note.—Scores are mean cm from low end of scale. Correlated standard error is .19, 330 df; the uncorrelated standard error is .76, 30 df. The means for this data are shown in Figure 1.

The higher rating by females of life topics and by males of science topics was expected, but the difference in pattern for the sexes on the course and topic ratings was unexpected and its reliability was tested in a second study.

In the replication study (1958) the usual higher rating during the time life topics were presented was found and females were again higher than the males on science ratings and lower on ratings taken during the life portion of the course (the Sex X Content interaction, F= 7.26, 3/129 df, p<.01).

In a second replication, the problems of order effects, instructor effects, and generality over other courses in psychology were explored. The order of the topics was widely varied from one course to another, different texts and instructors were used and students were hetrogeneous in age and major field of study. Instrumentality ratings of topics only were taken.

Life topics were again rated highest (F=58.00, 1/151 df, p<.01), and the Sex X Content interaction was again significant (F=4.39, 1/151 df, p<.05) with the males relatively higher on science and the females higher on life topics. Time of presentation and college affiliation were evaluated non-parametrically prior to the analysis of variance and were not considered in the analysis since no significant effects were found.

In the 1957 class significant interactions were found between the variables of Personality, Sex, Type of rating, and Type of content. Additional significant relationships were found between personality and other variables in every psychology course; however, there were no consistent patterns. Details may be found in Carney (1961).

TABLE 3

MEANS FOR THE PERSONALITY × COURSE INTERACTION ON COURSE RATINGS

(University of Michigan, 1957)

Course	Personality Group			
	High AO High SO	High AO Low SO	Low AO High SO	Low AO Low SO
French	2.83	2.85	2.91	2.74
Mathematics	3.07	2.64	2.73	2.87
Psychology	2.74	3.10	2.89	2.76

Note.–The most favorable rating in each course is underlined twice, the low point once. The standard error is .146, 507 df. A low score denotes a favorable attitude.

CONCLUSIONS

The general pattern of preference for life-oriented subject matter over science-oriented topics seems to hold in a variety of courses, institutions, and across different instructors and student backgrounds. A somewhat undesirable "image" of scientists is also held by students (Beardslee & O'Dowd, 1961; Landfield, 1954). The usual techniques of instruction do not make much headway against this bias, and in fact seem to be losing ground even in the face of a concerted national effort to

recruit top students into science and research (Nichols, 1964). New approaches are urgently called for.

Whatever new methods may be tried, sex differences in attitude may have to be taken into account. There is little sex difference in attitudes toward psychology overall. This confirms past findings such as those of Fuchs (1957). However, on ratings taken as the content is presented, consistent relatively higher ratings by females of life-oriented content and by males of science-oriented content are found. The interesting inversion of this sex pattern on ratings of the course itself awaits further exploration.

Such information can be used in planning teaching strategy. For example it may be possible to use supplementary assignments or reading, research, or field experience geared to relate the less popular topics for each sex to the topics of most interest to them. But much remains to be done before research can be of much help. The educational goals of the student, the classroom procedure and general atmosphere, and the personality of the instructor all require more precise specification (Carney, In Press). When these requirements are met, it may be possible to present a broad and rigorous subject matter in a manner specifically tailored to motivate each student, and at the same time to meet more effectively the needs of an increasingly more scientific society. (Seaborg, 1962).

REFERENCES

ANASTASI, A. 1958. *Differential psychology* (ed. 3). New York: Macmillan.

BEARDSLEE, D. C. & O'DOWD, D. D. 1961. The college student image of the scientist. *Science,* 133, 997-1001.

CARNEY, R. E. In press. The effect of situational variables on the measurement of achievement motivation. *Educational and Psychological Measurement.*

CARNEY, R. E. 1963. Achievement motivation anxiety, and perceptual control. *Perceptual Motor Skills,* 17, 287-292.

CARNEY, R. E. 1961. *An analysis of university student behaviors with measures of ability, attitude, performance and personality.* Doctoral dissertation, University of Michigan, Published No. 61-6325, Ann Arbor: University Microfilms.

CARNEY, R. E. & McKEACHIE, W. J. 1963. Religion, sex, social class, probability of success, and student personality. *Journal of Scientific Studies of Religion,* 3, 32-42.

EDWARDS, A. L. 1960. *Experimental design in psychological research.* New York: Rinehart.

EDWARDS, A. L. 1958. *Statistical analysis.* (Revised ed.) New York: Rinehart.

FUCHS, A. H., KLARE, G. R., & PULLEN, M. S. 1957. Student reactions to topics in general psychology. *American Psychologist,* 12, 219-221.

GOUGH, H. P. 1957. *California psychological inventory manual.* Palo Alto: Consulting Psychologist Press.

LANDFIELD, A. W. 1954. Research avoidance in clinical students. *American Psychologist,* 9, 240-242.

McKEACHIE, W. J. 1961. Motivation, teaching methods, and college learning. In Jones, M. R. (Ed.) *Nebraska Symposium on motivation,* 1961. Lincoln, Nebraska: University of Nebraska Press.

MORGAN, C. T. 1956. *Introduction to psychology.* New York: McGraw-Hill.

NICHOLS, R. C. 1964. Career decisions of very able students. *Science,* 144, 1315-1318.

SEABORG, G. T. 1962. A scientific society–the beginning. *Science,* 135, 505-509.

1967, Vol. 58, No. 6, 386-390

III-9

COOPERATIVE VERSUS COMPETITIVE DISCUSSION METHODS IN TEACHING INTRODUCTORY PSYCHOLOGY

DONALD BRUCE HAINES AND W. J. McKEACHIE
University of Michigan

Reprinted from Journal of Educational Psychology
by W.J. McKeachie
By permission of The American Psychological Association
Copyrighted 1967

Permission to reproduce this copy righted material has been granted by the American Psychological Association to the Educational Research Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce ERIC documents by means of microfiche or fasimile hard copy, but this right is not conferred to any user of ERIC materials. Reproduction by users of any copyrighted materials contained in documents disseminated through the ERIC system requires permission of the copyright owner.

COOPERATIVE VERSUS COMPETITIVE DISCUSSION METHODS IN TEACHING INTRODUCTORY PSYCHOLOGY

DONALD BRUCE HAINES AND W. J. McKEACHIE[1]
University of Michigan

Cooperative and competitive techniques of teaching discussion sections of general psychology were compared with respect to their effects on student anxiety, student achievement, and student satisfaction. The experiment involved 4 sections of introductory psychology. Students in these sections participated in class discussions conducted in a competitive manner for 2 weeks and with a cooperative method for 2 weeks. The competitive condition resulted in higher tension, poorer achievement in recitation, and less satisfaction than the cooperative condition.

How should a college discussion section be conducted? The present research was a direct attempt to compare competitively oriented and cooperatively oriented techniques of discussion. The comparison was made in terms of the relative amounts of tension produced by each technique, the effect of each technique on student performance, and the effects of the techniques on student satisfaction and recall.

A definitional scheme suggested by Deutsch (1949) assumes that in a group each member has certain ends he wishes to attain; that is, goals which have high attraction (or valence). To reach these goals, the individual may or may not have to depend on the behavior of other group members. In cooperation, what an individual does to help himself helps others; in competition, anything one does to help himself prevents others from moving toward their goals. In Deutsch's experiment, there was no clear difference between competitive and cooperative groups in terms of the amount of individual learning.

Hypotheses

1. There will be a higher level of group tension in competitive conditions than in cooperative conditions.

Both cooperative and competitive groups have tensions increased by the nature of the task. However, there is a difference in the instrumental behaviors leading to tension perceived by the individuals in the competitive group relative to the cooperative groups. Individuals in cooperative groups have many different paths to achieving their goals. This is not true for those in competitive groups. Consequently there is much greater probability that cooperative group members will have tension associated with the task reduced by the action of other members. The reverse is true for competitive groups. Here the probability is high that tension associated with task will be increased by the activity of other members.

---

[1] Donald Bruce Haines was killed in a plane crash in Ethiopia in August 1965 while doing research for the Aerospace Medical Laboratories of Wright-Patterson Air Force Base. This abridgement of his doctoral dissertation was prepared by W. J. McKeachie, his doctoral thesis chairman at the University of Michigan, who benefited from suggestions by Theodore Newcomb and members of the staff of the project of the United States Office of Education Research Contract O.E. No. SAE-8451 to W. J. McKeachie, J. E. Milholland, and R. L. Isaacson.

2. The higher tension levels in competitive conditions will result in disruption of performance in those conditions as compared with performance in a cooperative condition.

3. Unreduced tensions associated with tasks begun by one individual and completed by another in the group will be greater for competitive conditions than for cooperative conditions.

Under cooperation, the completion of a task moves everyone toward the goal, regardless of who began the task, but this is not so under competition. There only the person completing the task moves toward his goal.

4. The unpleasantness of high tension levels in competitive conditions relative to tension levels in cooperative conditions will result in member preference for and satisfaction with cooperative over competitive conditions in the classroom.

METHOD

Subjects

Eighty-two undergraduates enrolled in four sections of the introductory psychology course at the University of Michigan were used as subjects. The subjects were told that 4 weeks of the semester would be treated as experimental sessions in the sense that particular grading policies would be followed and that they would be observed during this period by two graduate students sitting in the class.

To check comparability of groups, a number of measures were gathered on the second day of class. Intellectual capacity was assessed by obtaining individual student American Council for Education (ACE) scores from the Bureau of Psychological Services. Class level, area of concentration, age, and sex were taken from a personal data sheet circulated to all students in the experimental groups. Median breaks were made for each of these variables and a chi-square test for differences between sections was conducted. For none of the variables did differences approach significance.

Enrollment figures were as follows: two sections of 20 students each, and two sections of 21 each.

Variables

The independent variable for this research was teaching technique, which was varied so as to result in a competitive atmosphere and a cooperative atmosphere. In both conditions, students were instructed that part of their final grade was dependent upon their recitation performance, but in the cooperative sessions they were also told that anything one individual did to help himself reach the goal (viz., answering recitation questions correctly, thus getting a higher final grade) automatically moved everyone closer to each of their goals (i.e., when one student answered a question correctly, everyone got credit toward his individual final grade). In the competitive situation, however, each student's grade depended on how well he answered questions as compared with the other students.

Control for content and sequence was achieved by adopting the following balanced design:

Classes 1 and 3: 2 weeks of cooperative technique + 2 weeks of competitive technique.

Classes 2 and 4: 2 weeks of competitive technique + 2 weeks of cooperative technique.

Two instructors each taught two classes. Each class was its own control.

Dependent Variables

Dependent variables fall into three categories: (*a*) assessments of tension level, (*b*) assessments of performance, and (*c*) assessments of satisfaction.

Assessments of Tension Level

Three procedures were used to get at the arousal and maintenance of tension systems in the individual and in the group. Two items on a questionnaire assessed tension level in the individual: "This technique promotes an easy, relaxed atmosphere in class." "This technique made me feel anxious and uneasy."

The second means of assessing tension levels in the group consisted of the use of two independent observers who categorized interaction of subjects during the experimental sessions in terms of the Fouriezos, Hutt, and Guetzkow (1950) observational technique.

The final means of assessing the unreduced tensions in the group consisted of a measure of the Zeigarnik effect produced when students volunteered for questions, but were unable to answer them completely. The Zeigarnik effect is observable in group functioning. Horwitz (1954) tested this by seeing if the Zeigarnik effect existed for individuals in group goal situations and demonstrated that it did. It would, then, be expected in our study that the tension aroused by attempting an answer and failing to complete it would be more likely to be reduced by the success of another student in the cooperative group than in the competitive group.

A Zeigarnik Recall Form was constructed which simply asked each student to recall as accurately as possible each question he volunteered for and tried to answer, whether credit was given or not. These forms were circulated and collected during the final experimental session of each condition.

Assessment of Performance

A daily measure of recitation performance was obtained by providing each instructor with a seating chart labeled with the names of students in each of his sections, and then having him score students attempting answers to questions. The procedure selected for discussion periods was that of recitation-drill, following the form described by Guetzkow, Kelly, and McKeachie (1954).

The recitation-drill approach consists of bringing to class a prepared list of questions on specifically assigned textbook material. Depending upon the experimental conditions, the student or his group was given credit for answering the question correctly. If the answer was incorrect or incomplete, the credit was lost. The instructor kept asking the question until someone replied correctly. If no one was able to do so, the whole group lost credit in the cooperative condition, and as many students as volunteered lost credit in the competitive condition. When everyone volunteered in both situations, the amount lost or gained was identical. To the extent that not everyone volunteered in the competitive group, then the cooperative group suffered a heavier penalty. If anything, this inequity operated against the major hypothesis, and hence was allowed to remain in the design. The final measure of group performance for all conditions consisted of the number of questions covered per minute for a given session.

The other measure of group performance consisted of two scores on the regular course hour-long examination. The hour examination consisted of two parts: Part 1, covering the first 2 weeks of the course (which for two sections consisted of the cooperative condition and for two was the competitive condition), and Part 2, which covered the last 2 weeks of the experimental sessions. The examination was multiple-choice, containing 40 questions with 20 to each part.

Assessment of Satisfaction

The following items of the student post-session questionnaire comprised the measure of satisfaction: (*a*) "I preferred this technique to the other one"; (*b*) "This technique made me doubt my own abilities and lowered my self-assurance"; and (*c*) "I would enjoy being taught by this technique."

RESULTS

The experimental results support the hypotheses. The results indicate that the independent variable of discussion technique was effectively manipulated, and that crucial control measures did in fact remain constant across sections. In all, 18 predictions were made concerning manipulations, controls, and dependent measures. Of these, 15 were significantly supported, two were in the predicted direction but were not significant, and one of the 18 predictions was neither significant nor in the predicted direction.

Levels of Tension

The major hypothesis for this research stated that relative to cooperative conditions in the classroom, competitive conditions produce an excessive tension level, as evidenced by greater incidence of self-oriented need, lack of relaxed atmosphere, and feelings of anxiety and uneasiness. Students in the competitive sessions consistently showed a greater incidence of self-oriented need per act (as assessed by observers) compared with their behavior in the cooperative

TABLE 1

Incidence of Self-Oriented Need: Overall Assessment per Session for Cooperative Versus Competitive Techniques

M_D[a]	SD_D	Direction of prediction	t[b]
2.68	1.12	Comp. Coop.	9.4*

[a] Incidence between conditions. (Each class paired with itself—1st session cooperative with 1st session competitive, etc.)

[b] t test of direct differences computed. $N = 16$.

* $p < .001$.

sessions. ($F = 84.50$, $df = 1/24$, $p < .001$.)

Similar results hold for the incidence of self-oriented need assessed as an overall measure for each session.

Questionnaire items (postsession questionnaire) relating to anxiety perceived by the individual also clearly bear out the hypothesis. Students in the competitive sessions felt distinctly more tense and anxious than they did in the cooperative sessions. (See Table 2.)

In general then, we have provided documentation that the utilization of competitive discussion procedures under the controlled conditions specified in this research can and does lead to high levels of tension in the classroom.

TABLE 2

Differences in Self-Reported Anxiety and Tension during Discussion

Questionnaire item	Means		Difference	t
	Competitive	Cooperative		
3. This technique made me doubt my own abilities and lowered my self-assurance	+.84	−1.01	1.85	7.72*
4. This technique promotes an easy, relaxed atmosphere in class	−2.18	+1.97	4.15	23.48*
6. This technique made me feel anxious and uneasy	+1.26	−1.51	2.77	11.02*

Note.—Likert-type scale. Strongly Agree (+3) to Strongly Disagree (−3).

* $p < .01$.

Disruption of Performance

In daily recitation, the performance measure was the number of questions covered during the class session. Students in the cooperative sessions covered more questions than they did in the competitive session. ($F = 5.65$, $df = 1/24$, $p < .05$.) Examination performance of the two groups, however, did not differ significantly.

Unreduced Tensions

The hypothesis that there should be less unresolved tension in cooperative than competitive classes was tentatively supported. ($F = 3.97$, $df = 1/24$. $p < .10$.)

Satisfaction

The final prediction of the present research was that tension levels high enough to lead to anxiety, incidence of self-oriented need, and disruption of performance would result in lowered satisfaction and preference for the conditions resulting in these unpleasant consequences. Table 3 illustrates that students did prefer the cooperative method.

TABLE 3

Satisfaction with and Preference for the Discussion Techniques

Questionnaire item	Means		Mean difference	t[b]
	Competitive	Cooperative		
2. I preferred this technique to the other one	−.82	+1.38	+2.20	5.78*
3. I would enjoy being taught by this method	−1.06	+1.17	+2.23	7.16*

Note.—Likert-type scale. Strongly Agree (+3) to Strongly Disagree (−3).

[a] t test of direct differences was computed. $N = 82$.

* $p < .01$.

Discussion

The nature of the goal interdependency structured in the college classroom has a powerful effect upon student behavior. Today's student has so many conflicting demands placed upon him by extracurricular activities and varied social responsibilities that the classroom atmosphere must be potent indeed to attract and hold even a part of the student's interests. The prevailing answer has been to promote deliberately a keenly competitive atmosphere in the classroom with the hope that students will be motivated and devote more energy to school work.

It is presumptuous to question the effectiveness of competition, especially when it is so deeply implicit in modern education, unless a sound basis for demonstrating otherwise can be established. The present research has provided such a basis. Competition, in particular a competitive grading policy, arouses tension in the individual. Many find it agreeable that competition should do so. What is little recognized, however, is that the contribution made by competition to tensions already existing in the student is so great that undesirable consequences may follow. The present research demonstrated that students in competitive discussion situations became more anxious, displayed a greater incidence of self-oriented needs, and found themselves losing self-assurance. Further, they were less able to perform effectively in recitation, and they became dissatisfied with the discussion procedure. When the discussion was structured cooperatively, students felt less tense, displayed more task-oriented behavior, worked more effectively, and enjoyed the discussion.

REFERENCES

Deutsch, M. A theory of cooperation and competition. *Human Relations,* 1949, **2,** 129–152.

Fouriezos, N., Hutt, M., & Guetzkow, H. Measurement of self-oriented need in discussion groups. *Journal of Abnormal and Social Psychology,* 1950, **45,** 682–690.

Guetzkow, H., Kelly, E., & McKeachie, W. An experimental comparison of recitation, discussion and tutorial methods in college teaching. *Journal of Educational Psychology,* 1954, **45,** 193–207.

Horwitz, M. The recall of interrupted group tasks: An experimental study of individual motivation in relation to group goals. *Human Relations,* 1954, **7,** 3–38.

(Received December 16, 1966)

III - 10: Sex of Instructor and Student Performance

Wendy House, Wilbert J. McKeachie

Despite the many studies done on effects of various teacher characteristics there has been very little focus on the effect of sex of the instructor. Perhaps this is because the majority of college-level instructors are males and/or perhaps on the college level expectations of differences due to the sex of the teacher merely represent out-dated and unfounded stereotypes. Therefore, the present study was undertaken as a probe to see whether or not this might be an important, though overlooked, variable.

In order to see whether sex of instructor per se might affect student performance, the attempt was made to match male teaching fellows with female teaching fellows on achievement and affiliation cues according to student ratings. That is, if a teacher is seen as high on emission of achievement cues, it means that students typically see him as setting high standards of achievement, and they report that students compete to do well in his class. If he is reportedly high on affiliation cues, his students typically feel that he takes a personal interest in them and calls them by name. In addition, instructors were matched on student assessments of teaching skill and teaching ability.

The sample of instructors to be matched were all those who taught "Psychology as a Social Science" (Psychology 101) in the Spring of 1963 since this was one of the first times that there were a sizeable number of female teaching fellows to use in a comparison. It was possible to come reasonably close in matching all seven female instructors with male instructors. Of these, four were high on both achievement and affiliation cues (Hi-Hi) and three were low on both (Lo-Lo). No pairings were possible for instructors who were high on one cue and low on the other. Thus, all three Lo-Lo matchings were used and three of the four Hi-Hi's were randomly selected.

We then looked at available data for students in these twelve sections. Of the possible measures of performance we selected the grade each student received in Psychology 101 although it can be argued that this measure reflects the instructor's biases as well as the student's objective performance. Students were then divided at the median on several variables and performance scores of the two halves were compared for sections having matched male and female instructors. The four student-characteristic variables examined were: n Achievement, n Affiliation, OAIS Achiever Personality score, and SAT score. No significant differences were found for grades received by students having male vs. female teaching fellows for the first three characteristics.

For SAT scores, however, puzzling but consistent differences emerged for students having matched teaching fellows of the opposite sex. Analysis of variance revealed a significant main effect of ability level (Hi or Lo SAT) and a significant interaction effect of ability level and sex of teaching fellow. As a main effect, however, sex of instructor was not significant. Results of this test are summarized in Table 1.

Next, _t_ tests were run on group means. These results are presented in Table 2 and represented graphically in Figure 1. Here we see that with teaching fellows high on both achievement and affiliation cues, students of higher ability (SAT of 112 or above) did not differ significantly whether they had a male or a female instructor. The same was true for students of lower ability (SAT of 111 or below) with Hi-Hi instructors. However, when the instructor was low on emission of both types of cues, sex did make a difference. Thus, high ability students did significantly better with a Lo-Lo male teaching fellow than with a Lo-Lo female teaching fellow, but just the reverse appears for low ability students who do significantly better when the Lo-Lo instructor is a female.

Another way to look at this figure is to compare Hi and Lo SAT students within each of the four general types of teaching fellows. For Hi-Hi male instructors, high and low ability students perform about the same. Yet with a Hi-Hi female, the two student groups split significantly. Again there is a reversal when looking at Lo-Lo instructors. Here there are no differences between students of the two ability levels when the instructor is a female. However, with a Lo-Lo male teaching fellow, a very significant difference occurs so that the Hi SAT students considerably out-perform their less able counterparts.

Comparisons were then made between Hi-Hi and Lo-Lo teaching fellows of the same sex. Here (see Figure 2) we see that Hi SAT subjects tended to do better with a Lo-Lo male instructor than a Hi-Hi male instructor although the significance level is only .10. On the other hand, Lo SAT students reversed when looking at performance with female teaching fellows, but none of the comparisons is significant. That is, with female instructors, more able students tended to do better when the instructors were Hi-Hi and less able students tended to do better with Lo-Lo instructors.

Since the numbers of male and female students were not equal in each section (see Table 3), it could be that the students' sex was responsible for some of these differences. Therefore, males and females were separately divided into high and low SAT scores. Here the two medians differed from the overall median (Males: Hi = 116 or above; Lo = 115 or below. Females: Hi = 108 or above; Lo = 107 or below). As Figure 3 shows, with Hi-Hi teaching fellows, male students are always more extreme, but the patterns for the two sexes are the same, and differences between grades received by the two sexes within each ability level do not approach significance. With Lo-Lo instructors the graphs for high ability male and female students are less similar and a cross-over occurs. Yet, even the difference between high ability males and females with a Lo-Lo female teaching fellow reaches only a low level of significance ($t = > .10$) because of the small number of cases in this group. Furthermore, for lower ability students, the graphs for the two sexes are nearly identical.

Moving from presentation to explanation of these results is more difficult. No hypotheses were formed in advance since we were not aware of research in this area which would help in predicting the direction results might take. From the present study it appears that with a male teaching fellow who sets high standards for achievement and is simultaneously perceived as warm, students of high and low ability perform about the same. This is not true if the Hi-Hi teacher is a female since in this case high ability students perform significantly better than low ability students. Perhaps a Hi-Hi female instructor tends to challenge the more able students and threaten those less able. Furthermore, the former group tends to do better with a Hi-Hi female than a Hi-Hi male and the latter group tends to do just the opposite; that is, better with a Hi-Hi male than a Hi-Hi female. Neither of these differences is significant, however.

With teaching fellows who are low on both cues, sex of instructor appears to be especially important. Here high ability students do significantly better with Lo-Lo male instructors than with Lo-Lo females. It is as if a Lo-Lo female (relative to her male counterpart) does not call for high performance, and perhaps the Lo-Lo male does not appear to be so competent that students feel stifled by his ability as they may with a Hi-Hi male. That the reverse is true for low ability students is interesting. Here it appears that students low in ability in a class with a Lo-Lo male are simply not motivated to work for any reason. Perhaps the lack of high standards from the female instructor appears to be less contradictory and thus does not impede performance. In fact, with a Lo-Lo female (as with a Hi-Hi male) students of both ability levels receive nearly identical grades.

It appears somewhat surprising that student performance is nearly identical with Hi-Hi male instructors and Lo-Lo female instructors. Prior expectations were that these types of instructors might bring out the extremes; i.e., that students under Hi-Hi males might perform best and students with Lo-Lo females might perform worst. Here, however, the need for a more objective measure of performance is crucial. Yet it is possible that these two teacher "types" fit best with the students' expectations and thus lead to less varied performance. Perhaps the Hi-Hi female and the Lo-Lo male run contrary to sex-role expectations and produce more extreme performances depending on ability level.

Overall, student perception of cues emitted by the instructor seems especially important with male teaching fellows. Thus, while neither of the differences between Hi-Hi and Lo-Lo female instructors are significant, both of those for Hi-Hi and Lo-Lo males are significant at at least the .10 level. That is, Hi SAT students do better when the male teaching fellow is Lo-Lo and low ability students do better when he is Hi-Hi.

Interpretation of results would be greatly aided if we had been able to match instructors who were high on one cue and low on the other. In this way we might have been able to tell whether achievement or affiliation cues are influencing the pattern of results and whether emission of one type of cue is more important for instructors of one sex than the other. For example, perhaps perception of low achievement cues is more contradictory with a male teaching fellow; perception of low affiliation cues, more contradictory with a female instructor. This separation of cues seems to be the necessary next-step toward understanding the differences found here. In any case, the present results seem to point to the need to look more carefully at the old sex-role stereotypes as they apply to college instructors and the performance of their students.

Figure 1.

The Interaction of Student Ability, Teacher Sex, and Teacher Cues to Achievement and Affiliation with Student Grades

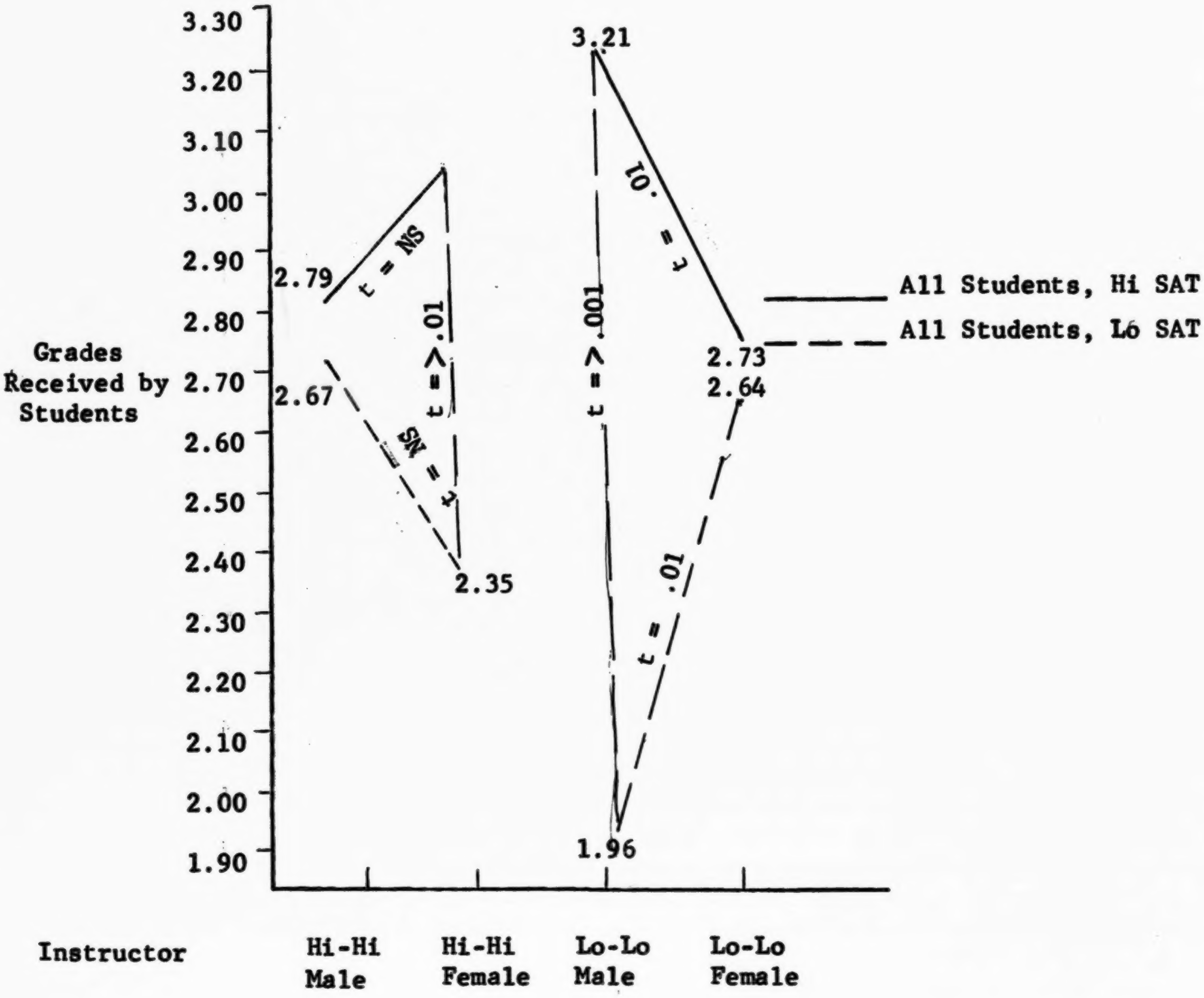


Table 1

Analysis of Variance: Sex of Instructor X Student Ability Level

Source of Variation	SS	df	MS	F
SAT	9.87	1	9.87	12.8**
Sex of Instructor	.51	3	.17	--
SAT X Sex of Instructor	7.15	3	2.38	3.09*
Within Cell	106.6	138	.77	

* t = > .05

** t = > .01

Table 2

Grades Received by Students

	Teaching Fellow								
	Hi-Hi Male[1]		Hi-Hi Female		Lo-Lo Male		Lo-Lo Female		
Students	Grade	n	Grade	n	Grade	n	Grade	n	Total
High SAT (112 or above)	2.79[2]	14	3.07	27	3.21	19	2.73	11	71
Low SAT (111 or below)	2.67	18	2.35	20	1.96	24	2.64	14	76
									147

[1] Hi-Hi = Above median both in achievement cues and affiliation cues.

[2] A = 4.00; B = 3.00...; E = 0.00.

Table 3

Grades Received by Male and Female Students

	Teaching Fellow								
	Hi-Hi Male		Hi-Hi Female		Lo-Lo Male		Lo-Lo Female		
Students	Grade	n	Grade	n	Grade	n	Grade	n	Total
High SAT									
Males (116 or above)	3.00	3	3.13	15	3.25	4	2.33	6	28
Females (108 or above)	2.83	12	2.92	13	3.14	14	3.00	5	44
Low SAT									
Males (115 or below)	2.57	7	2.17	6	2.09	11	2.71	7	31
Females (107 or below)	2.60	10	2.46	13	2.00	14	2.71	7	44
									147

IV - 1: Additional Work with the Criteria Test.

John E. Milholland, Denis Carville

The 1964 report of this project (McKeachie, Isaacson, Milholland, 1964) described in Section II-A the origin and development of the Introductory Psychology Criteria Test and summarized the research that had been done with it up to that time. The test then, as now, had two forms, X and Y, of 60 items each. In each form there were 10 items apiece for the following 6 objectives taken from the Taxonomy of Educational Objectives (Bloom, 1956): Interpretation, Application, Analysis of Elements, Analysis of Relationships, Derivation of Abstract Relations, and Judgment by External Criteria. The conclusion about the merits of the test stated in the report was,

> "The Criteria Test emerges as a good test of achievement in psychology so far as total score is concerned, but we cannot say that the subtest scores represent the objectives they were designed to measure, or in fact, with two possible exceptions, anything consistent and differentiable." (Sec. II-A, p. 13)

Although work on the Criteria Test under the present contract has not been as intensive as it was under the former one some developments have occurred that might mitigate the pessimism expressed in the above statement. First, consideration of the results of research on the test has led to a change in view about what a test of this sort should be expected to accomplish. It now seems that the most valuable function the Taxonomy can perform is to assist teachers and other test constructors in planning and making tests to cover the behaviors called for in the objectives. It would appear to be unquestionably within the capabilities of test constructors to devise items that would require the knowledges and skills described in the Taxonomy. For example, one can hardly argue that a test item that requires for its solution the breaking down of a communication into separate components is not an Analysis of Elements item. The fact that examinees who can answer the item, as opposed to those who cannot, do not seem to have an isolable skill that can be designated Ability to Analyze Elements does not impair the validity of the item, although it must be admitted that the discovery of such skill might enhance it. The shift in point of view that is being advocated here may be characterized as evaluating the test more on the basis of content validity and less on the basis of criterion-related validity (American Psychological Association, 1966).

The test has continued to receive widespread use. A considerable number of requests for it and for information about it have been received and answered. Form X was printed in its entirety in the test booklet (Carrier, 1966) designed to accompany the McKeachie and Doyle (1966) text for introductory psychology.

The 1964 report's Table 13 was provided by Karl Zinn from the data of his doctoral dissertation (Zinn, 1964). This study contained a very thorough analysis of the test item by item, as well as an assessment of its relations with a number of other variables by means of factor analysis. The factor analysis results appearing in Table 13 of the previous report were discussed briefly in that document. Zinn's results generally confirmed our findings that separable cognitive factors could not be extracted from the test, and in addition he pointed out that many interitem correlations were generated by having several items based on the same content. It thus seems even more clear now that the subtests of the Criteria Test refer to the kinds of operations examinees are required to carry through in order to answer the items and not to generalizable and transferable cognitive skills. A user of the Criteria Test should probably consider only the total score as a measure of achievement in psychology, regarding the allocations of items to objectives only as testimony for the diversity of cognitive behaviors evoked.

One feature of Zinn's factor analysis that caused difficulty in interpretation was that both the Criteria Test and an essay test had total and subtest scores introduced into the correlation matrix. To avoid this difficulty the factor analysis was redone with only the total score for each test used. The results appear in Table 1.

The first factor, with prominent loadings on test scores (Objective Test of Knowledge; Essay; SAT; Reading; OAIS Intellectual Quality; and Criteria Test) and course grade seems interpretable as a general ability factor with some leaning toward the verbal. The Criteria Test has its only high loading (.76) here and if one were to base his judgment of the test entirely on criterion-related validity he would have to say that the Criteria Test is largely a measure of general academic ability. The adoption of such a point of view would be unfortunate, however, because any test of general ability should correlate highly with achievement tests, since presumably the general tests measure ability to learn under instruction. The content validity of the Criteria Test is attested to by the procedure by which it was developed and may be verified by an inspection of the items. In addition, data presented in our 1964 report, in Table 2 of Section II-A, showed mean gains during the course approximately equal to the standard deviations of the distributions of pretest scores. It seems reasonable to conclude, then, that the Criteria Test is in fact measuring some abilities that improve during a course in elementary psychology.

Our search for measureable cognitive abilities corresponding with the categories of the Taxonomy of Educational Objectives was not completely abandoned, however. Dr. Zinn's discovery of the prominence of item content in the factors extracted from the test led us to wonder whether building a test like the Criteria Test for a particular class might control for this effect and allow the more subtle factors to emerge more clearly. A study to test this proposition was undertaken in the spring of 1965.

Mr. Solomon Cytrynbaum offered two of his sections in introductory psychology as the experimental scene and one of the present writers (Mr. Carville) attended one of them and wrote items based on the lectures, discussions and assigned readings. The items were intended to measure the same six objectives covered in the Criteria Test, plus Knowledge of Specific Facts, and were embedded in the regular examinations given in the course. Fifty-two, out of 59, students took all three tests and became the research sample.

Table 1
Factor Loadings (Principal Axes with Varimax Rotation) of Seventeen Variables for 273 Students in Psychology 101, Spring Semester, 1963

Variable	Factor			h^2
	1	2	3	
1. Objective Test of Knowledge (25 Items)	.56	.01	.23	.37
2. Essay Test	.35	.17	.32	.25
College Board Scholastic Aptitude Test				
3. Verbal	.77	-.01	-.13	.61
4. Mathematical	.54	.25	-.05	.36
Cooperative Reading Test				
5. Speed	.70	-.03	-.15	.52
6. Accuracy	.69	.07	-.05	.49
Opinion, Attitude and Interest Survey				
7. Achiever Personality	.08	.29	.38	.23
8. Intellectual Quality	.58	-.06	-.32	.44
9. Creative Personality	.11	-.30	-.41	.27
10. Social Science Interest	.12	-.63	-.15	.44
11. Physical Science Interest	.16	.60	-.02	.38
12. Biological Science Interest	-.34	.18	.48	.38
Thematic Apperception Test				
13. *n* Affiliation	-.02	-.14	.18	.05
14. *n* Achievement	-.06	-.16	.31	.13
15. *n* Power	.12	.06	-.26	.09
16. Criteria Test, Form X	.76	.00	.11	.59
17. Course Grade	.54	-.16	.30	.41
Eigenvalue	3.71	1.14	1.17	6.02

A total of 142 items appeared in the tests, but 32 were eliminated because they were judged to cover objectives not in the Criteria Test; in most cases simple recall. An additional 51 items with difficulties (per cent passing) outside the 25-75 range were eliminated in order to avoid some of the sampling instability in the interitem correlations. The final set of items thus numbered 59.

Tetrachoric correlations among the items were computed and eight factors extracted from the correlation matrix. The rotated factor matrix is shown in Table 2 together with the _a priori_ groupings with respect to the Taxonomy objectives.

In no case did as many as half the items in a Taxonomy group exhibit positive loadings of .40 or more on any one factor. This result therefore reinforces our previous finding that the objectives of the Taxonomy do not correspond with whatever cognitive skills are used by students in their performance on tests.

One other effort was made to discover a relation between the test's factors and the categories of the Taxonomy. Since the structure of the Taxonomy is hierarchical an orthogonal rotation of factors may prohibit the appearance of relationships that are actually there. Another rotation scheme, Hurley and Cattell's (1962) "Procrustes" method was therefore tried. This technique permits an investigator to instruct the computer to rotate the factors so as to approximate a preconceived factor structure as closely as the data will allow.

We could of course not know just how the cognitive abilities we were dealing with should actually be decomposed, but as an estimate we settled on having twice as much of the variance of an item relegated to the Taxonomy category to which the item was assigned as to each of the other categories inferior to the assigned one. The outcome of this venture is shown in Table 3. Our efforts to impose a structure on the data were generally not very successful but a few items conformed reasonably well. The numbers identifying them are underlined in Table 3 and the items themselves are reproduced in the appendix. We have not been able to understand why these particular items, and not others, should have fit our specifications. An inspection of the items leads one to the view that most of them are rather general in nature and thus may be reflecting a general level of achievement in the course much as the Criteria Test appeared to do. This supposition is strengthened by examining the relations among the factors, shown in Table 4. Since the Procrustes method is an oblique rotation method the factors may be correlated. The sizes of the cosines in Table 4 certainly indicate the presence of a strong general factor.

We are once again, therefore, forced to conclude that the construction of a test on the basis of the _Taxonomy of Educational Objectives_ does not produce factors conforming to the Taxonomy's objectives. This situation, we also emphasize again, should not detract from the utility of the Taxonomy as a guide in test construction.

Table 2
Factor Analysis (Principal Axes, Based on Tetrachoric Correlations, With Varimax Rotation) of 59 Test Items Written to Measure Seven Objectives in the Taxonomy, and Administered to 52 Students in Introductory Psychology, Spring, 1965.

Assigned Taxonomy Objective	Item No.	Rotated factor loadings of at least .40								
		A	B	C	D	E	F	G	H	h^2
1.12: Knowledge of Specific Facts	1	81								88
	2				52					50
	3								53	49
	4				49				48	64
	5						55	46		63
	6				43					52
	7	86								86
2:20: Interpretation	8				69					69
	9		85							83
	10	42		-42						62
	11				75					67
	12				44					31
	13	46				44				76
	14									34
	15			-68						66
	16					75				64
	17					73				70
	18	48						44		68
3.00: Application	19							42		45
	20	56						-43		75
	21							69		55
	22									36
	23									44
	24							49		53
	25						-82			82
	26		72							70
4.10: Analysis of Elements	27	47								55
	28					40				50
	29	86								98
	30						-44			42
	31			83						83
	32					43	-40			56
4.20: Analysis of Relationships	33								50	46
	34			46				55		65
	35				54			57		86
	36						-40			38
	37							79		81
	38									46
	39		-57						46	68
	40								75	71
	41									40
	42	52			-60					68
	43									35

(Table 2 continued on following page)

(Table 2 continued)

Assigned Taxonomy Objective	Item No.	Rotated factor loadings of at least .40								h^2
		A	B	C	D	E	F	G	H	
5.30: Derivation of a Set of Abstract Relations	44						43			37
	45									34
	46							48		58
	47	57								64
	48		45							53
	49									38
	50			-48		43				53
	51		40	72						82
	52									42
6.20: Evaluation in Terms of External Criteria	53					48				52
	54		41	- 43			44			57
	55								41	48
	56						54			60
	57			69						65
	58	48								69
	59							-61		68

Table 3
Actual Loadings and Those Specified By Procrustes Program: 52 Students, Spring, 1965

Assigned Taxonomy Objectives	Factors						
	1.12	2.20	3.00	4.10	4.20	5.30	6.20
1.12 Knowledge of Specific Facts							
A. Specified Loadings	99						
B Actual Loadings							
Item: 1	65					55	
2	30					41	41
3	23						37
4	43	41					
5	43				44		
6	28	22					
7	48		44				
2.20 Interpretation							
A Specified Loadings	57	82					
B Actual Loadings							
Item: 8	26	28					
9	37	34					
10	41	42					
11	52	38					45
12	11	11					
13	81	79					
14	-15	-15			24	25	
15	-10	-01				-36	-39
16	18	30			47	36	
17	44	57		76		65	
18	61	44					
3.00 Application							
A Specified Loadings	50	50	70				
B Actual Loadings							
Item: 19	10	11	09		30		
20	43	28	09				64
21	22	22	07		31		-32
22	22	25	23		34	29	
23	04	07	19		22	29	
24	23	18	33				
25	15	37	46				
26	09	07	03	10	-21	-10	

(Table 3 continued on following page)

(Table 3 Continued)

Assigned Taxonomy Objectives	Factors						
	1.12	2.20	3.00	4.10	4.20	5.30	6.20
4.10 Analysis of Elements							
A Specified Loadings	45	45	45	63			
B Actual Loadings							
Item: 27	43	46	57	54			
28	33	38	46	47			
29	47	40	45	48			
30	24	32	29	34			
31	16	05	22	35		29	
32	12	30	26	34			
4.20 Analysis of Relationships							
A Specified Loadings	40	40	40	40	58		
B Actual Loadings							
Item: 33	19	24	13	08	35		
34	02	-01	25	21	30	31	
35	29	38	41	22	37		
36	14	25	11	12	-01		
37	47	51	52	37	72		
38	03	09	16	17	49	27	
39	14	05	-01	-06	18		32
40	33	34	16	11	36		
41	17	26	38	37	28		
42	10	11	23	29	12		
43	09	19	06	07	-07	-11	
5.30 Derivation of A Set of Abstract Relations							
A Specified Loadings	38	38	38	38	38	53	
B Actual Loadings							
Item: 44	00	-14	-07	-08	10	16	24
45	34	35	38	45	32	48	
46	34	25	28	08	10	10	
47	36	44	49	42	42	37	
48	36	45	43	40	35	23	
49	29	36	45	35	33	28	
50	24	34	18	18	40	14	
51	11	06	22	32	04	26	
52	-20	-03	10	18	10	09	-22

(Table 3 continued on following page)

(Table 3 Continued)

Assigned Taxonomy Objectives	Factors						
	1.12	2.20	3.00	4.10	4.20	5.30	6.20
6.20 Evaluation in Terms of External Criteria							
A Specified Loadings	35	35	35	35	35	35	50
B Actual Loadings							
Item: 53	43	42	28	42	31	48	49
54	03	-08	-29	-32	-08	-22	19
55	10	-03	-04	08	12	29	49
56	20	-02	-04	-04	-09	09	35
57	10	01	19	21	-07	26	19
58	21	25	23	07	09	02	-12
59	-05	-10	-26	-08	-15	04	52

Table 4
Cosines of the Reference Vectors For the Factors After Rotation in Accordance With the Procrustes Program

Factor	2.20	3.00	4.10	4.20	5.30	6.20
1.12	93	82	78	66	80	43
2.20		92	86	74	77	16
3.00			94	76	83	-02
4.10				72	89	14
4.20					81	03
5.30						43

References

American Psychological Association *Standards for Educational and Psychological Tests and Manuals*. Washington: APA, 1966.

Bloom, B. S. (ed) *Taxonomy of Educational Objectives, Handbook* I: *Cognitive Domain*. New York: Longmans, Green, 1956.

Carrier, N. A. *Evaluating the Introductory Psychology Course*. Reading, Mass: Addison-Wesley, 1966.

Hurley, J. R. and Cattell, R. B. The Procrustes Program: Producing direct rotation to test a hypothesized factor program. *Behavioral Science*, 1962, *7*, 258-262.

McKeachie, W. J. and Doyle, Charlotte *Psychology*. Reading, Mass: Addison-Wesley, 1966.

McKeachie, W. J., Isaacson, R. L. and Milholland, J. E. *Research on the Characteristics of Effective College Teaching, Final Report: Cooperative Research Project No. OE 850, U. S. Office of Education and The University of Michigan*. Ann Arbor: Department of Psychology, The University of Michigan, 1964.

Zinn, K. L. *Validation of a Differential Test of Cognitive Objectives of the First Course in Psychology*. Unpublished Ph.D. Thesis. University of Michigan, 1964.

Appendix
Items Conforming Most Closely to the Specified Factor Structure

1. There is a fairly high positive correlation between mental disturbance and broken homes. Therefore mental disturbances cause broken homes. Is this a valid argument?

   a. It is a valid argument.
   b. It should be the other way around; that is, broken homes cause mental disturbances.
   c. We have to know the size of the correlation before we can make this argument.
   d. We cannot argue cause from correlation.

13. The research on personality differences between early and late maturing boys points out

   a. the influence of environment on heredity.
   b. the influence of environment on maturation.
   c. the influence of learning on heredity.
   d. the influence of constitutional factors on personality development.

18. Rotter in his book "Clinical Psychology" has written, "The science of personality study is still in its early phase. There are many different theories about what constitutes the important aspects of human behavior, and there are several different approaches to the problem of assessment of personality. Each method has its advantages and limitations. Regardless of how easily the data may be obtained, the problem of interpreting the meaning of personality tests is still dependent on the skill and experience of the examiner."

   The author would be most likely to regard the use of projective tests as

   a. an art.
   b. a science.
   c. partly scientific, partly an art.
   d. dealing with matter beyond the scope of scientific treatment.

27. A psychiatrist found that 90% of the patients receiving electro-shock treatment for the involutional melancholic recovered within three weeks. He concluded that treatment was useful in the treatment of this disease.

   Assumptions:

   a. No other type of treatment would have been as effective.
   b. No patients would have recovered in three weeks without the treatment.
   c. Involutional melancholia must be an organic disease if it can be treated with physical methods.
   d. Electro-shock is more appropriate than other forms of treatment for this disease.
   e. Less than 90% would have recovered in three weeks without treatment.

28. Roarshock knows his father had a recessive disease-carrying gene, but did not show the disease. He (Roarshock) says the probability that he will suffer from the disease is .50. For this he must assume that:

- a. his mother's gene combination was XX (dominant-dominant).
- b. his father's gene combination was xx (recessive-recessive).
- c. his mother's gene combination was xx.
- d. his mother's gene combination was Xx.

29. Indicate which one assumption was implicitly made by the investigator in arriving at his conclusion. (In other words, what assumption would one have to make in order to arrive at the conclusion which the author reached?)

A mental patient was brought to the hospital with symptoms of hallucinations. On the basis of this alone, he was diagnosed schizophrenic by the examining intern:

Assumptions:

- a. All schizophrenics show hallucinations.
- b. Most people who show hallucinations are schizophrenic.
- c. Schizophrenics often show hallucinations.
- d. It is necessary to know something about a patient's history in addition to his present symptoms in order to arrive at a diagnosis.

35. Below is a statement about hypothetical data. In this case, indicate whether the statement supports the position that

- a. intelligence is primarily environmentally determined.
- b. intelligence is primarily based upon heredity.
- c. the statement can reasonably be interpreted in various ways, so that one interpretation favors a and another favors b.

A group of children that had been in an orphanage for 4 years had an average I.Q. of 77. A group of the same age who had been in the same orphanage for 2 years had an average I.Q. of 95.

37. If "the old problem of heredity or environment?" is seen as essentially meaningless today, which of the following is also meaningless?

- a. Which of the various genetic potentialities will be actualized as a result of the individual's life experiences?
- b. What limits to the development of this personality are predetermined?
- c. Is heredity the cause of such characteristics as intelligence, a mild disposition, emotional imbalance, etc.?
- d. How do we identify the presence of hereditary influence in a given area?

45. Which of the following does NOT fit with the other three?

a. Mrs. X is trying to get her 8 month old son to walk by practicing with him everyday.
b. Mrs. M. is angry with her 9 year old son because of his excessive interest in the anatomy of little girls.
c. Mr. Y is hoping that his 10 month old son will understand the necessity of using the potty and that he will cooperate, since he seems to understand when spoken to about it.
d. Mr. Q is very annoyed with his 5 year old son because he wakes his parents up every morning by climbing into bed between them.

47. Which of the following is NOT an example of the notion of a critical stage in development?

a. Mrs. Rubella had German measles in the second month of pregnancy. Later her infant was born deaf and with impaired speech organs.
b. Lemuel's father went away to war for four years when Lemuel was 5 years old. At 21, Lemuel seems to be rather feminine in his ways.
c. Clyde was frightened by a brown dog when he was 4. Now at 35, he is still afraid of dogs, cats, bears, fur coats, etc.
d. Eddie was injured in the forehead at age 3 months and the upper half of his face was completely bandaged till he was 9 1/2 months. Despite special therapy, he apparently will always find certain perceptual tasks difficult or even impossible.

48. Which of the following is least likely to be an example of identification?

a. John sees a dog dig the earth with his 4 paws and growl. John does likewise.
b. Edgar's teacher, who wears glasses, is big and scary. Edgar wants to wear glasses, too.
c. Maude, 19, sees Regretta Tarbo repeatedly tugging her blonde curl in a thrilling love film, in scenes in which her suitor is evidently spellbound. Afterwards at the Mug, Maude's date notices that she flips her ponytail repeatedly.
d. Adolf Hitler, age 6, saw a barrel-chested male wallpaper hanger with Maimie Eisenhower type bangs stomp an antagonist into the ground. We know the coiffure that Adolf later adopted, long after he had forgotten the barrel-chested paperhanger.

49. A set of reactions in the clinical field against Freud's approach to personality theory and psychotherapy have generally been in the direction of:

a. greater reliance on objective measures and scientific method.
b. greater emphasis on the biological basis for psychic disorders.
c. greater reliance on the capacity of the client to understand his problems and an emphasis on the present environmental situation.
d. greater reliance on more adequate psychodynamic theory and on interpretation by the therapist.

53. If a mother gets custody of a child in a typical divorce case, according to psychosexual theory, we would expect the break-up of the home to affect which of the following the most severely?

a. a boy of 5-6.
b. a child of 2-3 of either sex.
c. a boy of 1.
d. a boy of 9.

IV-2: A Study of the Items of the Introductory Psychology Criteria Test in Light of a Validation Procedure*

Karl L. Zinn and John E. Milholland

Introduction

It is the purpose of this paper to present an empirical procedure for confirmation of the content validity of differential achievement tests. The approach is exemplified by the report of a study intended to evaluate a taxonomy of educational objectives (Bloom, 1956) with a carefully developed psychology achievement test (Milholland, 1964) based on the same taxonomy. The primary concern of the example reported here is with the differentiation of cognitive objectives requiring more than knowledge of facts and definitions.

In any evaluation of the effectiveness of teaching or of the achievement of individual students a statement of educational goals, aims, or objectives is implied. Preferably the educator makes an explicit statement of the objectives of his instruction and the measurement of achievement follows from that statement. Furthermore, the statement of objectives should be in terms which may be accurately interpreted by other educators or researchers. However, any measure of student achievement by the teacher incorporates at least an implicit definition of goals set for the students. For purposes of evaluation it is important that the measures correspond with the goals.

For some time educators have been concerned with the objective measurement of cognitive learning which goes beyond straightforward knowledge and skills (Brownell, 1946; Bernard, 1942; Smith & Tyler, 1942, Anderson, 1944; Ristler, 1945; Horrocks & Troyer, 1947). However, seeking differentiable effects empirically, such as interaction between methods and achieved course objectives, should be preceded by a demonstration that the measures of the objectives of instruction are different from each other and from abilities unaffected by learning.

Studies and discussions since about 1950 have made generally available a language and a technology which should aid in identifying and measuring criteria for research on teaching. A number of taxonomies or classifications of performance criteria have been provided (Bloom, 1956; Guilford, 1956, 1959, Gagne, 1963; Stolurow, 1964). The concept of validity has been extended by such ideas as Guilford's (1946) factorial validity, Peak's (1953) functional unity and confirmed predictions, Cronbach's and Meehl's (1955) construct validity, and Campbell's and Fiske's (1959) discriminant validity. Empirical achievement test validation should supplement the content judgments.

Four requirements or standards for the empirical validation of a differential test are proposed. They were used as guidelines in a review of literature and form the basis for the validation procedure of the study reported here. They represent aspects of achievement test validity often overlooked.

---

*This paper is adapted from the senior author's doctoral dissertation, which was carried out with support from the project.

Distinctness Among Criteria. The first standard is that the reliable variances in the measures be sufficiently distinct to assure that the scores represent different kinds of achievement. It should be noted that distinctness depends also on characteristics of the group of persons used for validation. Tests which have proved distinguishable in one population may show much common variance when applied to another population. When a matrix of correlations does not imply distinctness it may be that the training given that population produces high intercorrelations among otherwise distinct measures. Therefore, when this standard is not met the conclusion is negative only to the extent to which the characteristics and treatment of the population should have provided differentiable measures. When the variances are distinct, differentiability is implied.

The application of this distinctness standard is somewhat arbitrary and depends on the intended uses of the measures being validated. A rough approximation to differentiability is given by the rule that the intercorrelations be less than the reliabilities. For small batteries of achievement tests the reliabilities probably should be above .70 and the intercorrelations below .50. This assures that about two-thirds of the variance of each measure is "true score" variance, and, if errors on different measures are uncorrelated, no more than about one-third of the true variance is common to each other measure considered. For higher reliabilities the separation must be greater to limit the common variance between pairs of measures to a maximum of one-third. A convenient way of viewing this standard for differentiability in a large matrix of correlations which includes a wide range of reliability values is to correct each coefficient for attenuation due to unreliability of both measures. The triangular matrix of corrected coefficients gives the correlation between "true" measures, and values near unity indicate indistinguishable measures. It should be noted that overestimates of reliability make the corrected matrix imply greater distinctness since the true correlations would be underestimated.

There is a possibility that this criterion limiting the overlap of any two tests will not assure the distinctness desired. For a battery of four tests the variance of one could be entirely shared with the three other tests but only one-third to each.

When it is important to check for this possibility, the distinctness of each measure can be represented by the proportion of true variance minus the proportion of variance predicted by all the other measures combined, that is, the proportion of variability not attributable to any other measure or to unreliability. For any sizeable matrix it is more convenient to use factor analysis to represent the differentiation of subtests. This is similar in some respects to Guilford's (1946) factorial validity.

Single Method Testing. The second standard, closely related to the first, is that the different objectives all be measured by the same testing method or item type. The two standards together provide a weak version of one of Campbell's and Fiske's (1959) requirements for discriminant validity, that is, that the reliabilities be greater than the intercorrelations for a number of traits all of which are measured by a single method. Campbell and Fiske recommended that the validities given by correlation across methods be greater than the reliabilities. The gathering of additional data by other methods is necessary to isolate the variability of an intended achievement trait such as problem solving from that contributed by the test method and means of scoring. The employment of a number of different achievement testing methods such as selected response, constructed response, and judgment of written work, is a difficult approach to validity, but Vernon (1962) investigated reading comprehension by various testing methods with some success.

A minimum standard for achievement test validation is that multiple criteria measures be differentiable within a single testing method or item type. For instance, instead of mixing objectively scored and juror-rated tests in one set of outcome measures, one might use multiple choice format throughout a test battery. If sets of items of different types are used, then each test should include more than one type so that a comparison across item type can be made. Employing a single method or a set of methods throughout the domain or achievement is difficult since different course objectives often appear most readily measured by different measurement techniques. However, the scores must represent student performance on the desired objectives more than the unique characteristics of the methods selected for evoking performance.

Distinctness From Aptitude. The third standard is that the achievement measures which have been found differentiable within one method also be distinct from measures of aptitude. If a test battery including both achievement and aptitude measures is used, the entire correlation matrix may be considered for distinctness. For an achievement measure to show some relation with aptitude is to be expected, especially if the instructional procedure is making the most of the individual abilities of the students to carry each to his best achievement. However, in typical educational situations a considerable variance in common between tests of aptitudes, which are not expected to change during the course of instruction, and tests of eventual outcomes detracts from the interpretation the latter as measures of achievement.

Two reservations were given in the discussion of this distinctness standard. First, near perfect prediction of achievement by ability measures does not necessarily negate the validity of the achievement tests; the agreement may be due to particular characteristics or training of the population. Second, the rule limiting maximum variance in common between any two measures may not assure distinctness. For example, knowledge, reading comprehension and verbal reasoning may account for all of the variance of a test of critical thinking in psychology although no more than one-third of its variance is common with either of the other measures. In the study reported here the ambiguity in a large matrix of correlations is reduced by factor analysis; the way the communality of a test or item is shared may be seen from its factor loadings.

Status Difference. Although data for the correlational aspects of validation are more readily obtained, other data such as group differences or changes during instruction are needed to support the construct associated with an achievement measure (Cronbach & Meehl, 1955). Validity is implied by finding differences or gains not attributable to factors such as habits of speech, response set, abilities or specific knowledge, incidental to the achievement intended.

A number of empirical studies have been reported in the literature, and a few examples may be cited. Johnson and Smith (1953) provided a matrix of correlations of cognitive measures in their monograph on democratic leadership in the classroom. The reliabilities are about .70 and seven out of ten intercorrelations are well below .50. However, the interpretation of the matrix is ambiguous in two respects. First, the measures of application and reading may appear to be distinct from the others when really they are not. The test of reading comprehension for psychological literature may not be distinct from a measure of general reading comprehension. One would not expect the latter to be improved by studying psychology. The cirteria measures could be better interpreted if the battery included tests for reading comprehension, verbal reasoning, and the knowledge of terms and facts used in the other achievement measures. The second ambiguity is due to a difference in method of measurement among the five tests. The large amount of common variance among the multiple choice measures for the first three objectives suggests that the last two differ because they require greater skill in comprehension of written material, as well as better achievement. One should be able to confirm the measure of an objective by agreement between two different item types intended to measure the same objective. This agreement should be greater than for the same type across objectives. Additional data and longer achievement tests are necessary to separate the variability of an intended achievement trait such as application or technical reading comprehension from that determined by the method and means of scoring. The five tests used by Johnson and Smith may differentiate achievement, but the data which would support this face validity judgment are lacking.

The Watson-Glaser Critical Thinking Appraisal (Watson and Glaser, 1952) employs the same item format throughout five scales. Validation data for the differentiability of the individual subtests in a longer experimental form, dated 1949, evidence two definite clusters. Four aptitude and achievement measures form a tight cluster to which the inference subtest is attached about to the extent of its reliability. Each of these five correlated higher with every other than with any test outside the group. Three other Critical Thinking subtests appear in another cluster of four. Of these four reasonably reliable subtests one appears to be a general ability measure and the remaining three do not meet the distinctness criterion. This criticism is directed toward the differentiability of the subtests, and not the validity of the total score.

The report of the measurement portion of a large-scale study of general education (Dressel and Mayhew, 1956) included discussion of a test of critical thinking constructed for that study. The five short subtests of the test were combined across two forms of the test to assess reliability and distinctness. Four subtests of this longer experimental form were labeled selection of information, recognizing assumptions, selecting hypotheses, and drawing conclusions. Half of the intercorrelations are below .50 and the highest is less than the lowest reliability; the matrix implies some distinctness among subtests of the longer experimental form.

Furst (1950a, 1950b), in a broad study of secondary school methods and the development of higher mental processes, undertook an ambitious task in validating differentiable tests of intellectual skills and abilities across subject matter areas. He obtained lower correlations for the same objective across a subject matter field than for different objectives within a single field. That is, tests of different objectives within the same subject matter had more in common than the same objective in different areas.

In 1948 a number of college and university examiners informally organized to discuss a framework to facilitate communication among educators. These meetings eventually led to the preparation of a handbook (Bloom, 1956). Since the major purpose of this effort was to further communication among educators, the first guiding principle for development of the taxonomy was that it reflect the distinctions made by teachers in their preparation and presentation of teaching material.

One of the specific uses of the taxonomy suggested in the Handbook was as a basis for the selection or development of evaluation instruments and techniques. It is desirable to have achievement tests which provide distinct measures of the different objectives of a course. This allows the evaluation of relative successes of different materials and methods in different areas of achievement, or the diagnosis of particular difficulties of individual students.

The authors of the Handbook probably were aware that the distinctions educators wish to make among objectives of instruction do not necessarily correspond with psychologically meaningful dimensions of student behavior. Nevertheless they were optimistic about the prospect of valid measurement of distinct objectives expressed in terms of what a student must do to demonstrate achievement of some educational goal. In the Handbook two studies were mentioned which investigated interrelations among educational objectives found in the taxonomy (Dressel and Mayhew, 1956; Furst, 1950a, 1950b). However, the data provided did not support the hypothesis that the different tests actually measured achievement of distinct objectives of instruction. The studies were reviewed briefly in the previous section.

The Present Study

The Introductory Psychology Criteria Test (Milholland, 1964) had been developed to measure six different objectives described in the Taxonomy of Educational Objectives. Experience with the test, however, provided only slight encouragement for the view that the subtests were measures of different cognitive skills. When the six pairs of subtests in the two forms were intercorrelated, in only five, out of a possible twelve, instances was the highest correlation for a particular subtest in one form the one with the corresponding subtest in the other form. The present study represents an analysis, on the item level, of the relations between the two forms of the Criteria Test.

The Sample and Test Administrations. Forms X and Y of the Criteria Test were given as part of the final examination to about 1400 introductory psychology students at the University of Michigan in January of 1963. Form X and a content-oriented examination were also given under similar conditions as a final examination to about 800 students taking the one semester introductory course during the spring semester of 1963. In addition to these examinations, scores on aptitude and interest tests given to all freshmen at the University were obtained for most of the spring semester students. Additional motivation and attitude measures were collected before and during the semester.

Validation Procedures. The validation of a multifaceted criterion measure to be used in research on effectiveness of teaching requires something more than inspection of the items. If subtests are intended to measure different criteria, it is important to evaluate them empirically with reference to the three of the four standards described above: 1) and 2) require differentiation which is not attributable to method or to item-type differences, and 3) requires distinctness from measures of ability. Correlational analysis was employed to explore the interrelation of subtests or individual items and the factorial composition of a test in reference to other ability and achievement measures.

The first question of this validation procedure concerned the reliability and differentiation within the taxonomy subtest. An item by item analysis was undertaken to determine whether a few items accounted for the overlap with other groups of items.

The correlational analysis used here assumes normal distributions underlying the binary item responses. Since the purpose of this analysis is one of relation between true scores and not assessment of predictive power, the coefficient used should represent the product moment correlation which would be obtained if the normality assumption is met. Therefore, tetrachoric and biserial coefficients were chosen over phi and point-biserial. The former do not limit the index of relation when comparing high and low difficulty items from the same subtest (Ferguson, 1941; Carroll,1961), although they do assume normal distributions underlying the binary item responses.

The homogeneity of a subtest is apparent in the biserial correlations of the items of that subtest with the subtest total score. Evidence of differentiation is to be found in the correlations of the items of a subtest with each of the five other subtest scores. Each item is empirically validated against the average of all other items which were assigned on a priori grounds to the same objective. The validity coefficient is judged relative to the correlation of the item with other subtests. This approach to homogeneity allows for the removal of a few offending items if they were assigned to the wrong objective originally. Successful analysis depends on having some homogeneity of the item groupings at the start. Otherwise, the criteria for validity are inadequate.

In order to provide for computing the tetrachoric correlations between pairs of binary scored items a digital computer procedure was developed to apply the polynomial equation solution (Kendall, 1961) to any degree of accuracy. It was also used to provide reference tables to two place accuracy.

The matrix of correlations was tested for groupings by McQuitty's (1961) typal analysis. This provided a homogeneity and distinctness measure similar to biserial analysis, but it allowed for other groupings not anticipated by the taxonomy. Types (clusters of items which correlate among themselves more than with any outside item), or categories which approached types, were compared with a priori groupings made according to the taxonomy. The McQuitty technique places each item in only one cluster or hierachy of clusters. If many items are complex in terms of the underlying orthogonal structure clusters will not appear.

Since typal analysis did not provide distinct clusters, the intercorrelations were subjected to factor analysis. A principal axes solution was obtained to account for the total communality of the correlation matrix. Squared multiple correlations were intended for the estimates of item communalities but in each case the inversion of the matrix of tetrachoric coefficients was unsuccessful so the highest correlation for each variable was inserted in the diagonal. Varimax rotation was selected over other machine procedures to emphasize the simple structure of the factors.

An oblique solution had been preferred for interpretation because of the heirarchical structure of the taxonomy. Considerable computing time was saved in accomplishing the oblique rotation by beginning with the already rotated orthogonal solution; results can be expected to be essentially similar to rotating the principal axes obliquely (Harman, 1960). The oblique rotation was by the biquartamin method recommended by Carrol (described in Harman, 1960) as a more satisfactory solution than oblimin or quartimax.

The factor analysis was repeated on the data provided by the spring, 1963 sample. In this way the validity of the item groupings for Form X was checked. This was not strictly a replication, but it was more demanding. The first analysis on fall data was based on a set of items from both Forms X and Y. In the validation analysis of the spring data the same groupings of items were expected among Form X items alone.

The second requirement proposed for this procedure was that no distinguishable subtest consist of only one item type unless that type appears on other subtests as well. The third requirement, distinctness from ability measures, was studied by examining the correlations with other measurements of achievement, ability, and motivation: eight constructed response items corresponding to four of the objectives of the taxonomy; 25 multiple choice knowledge items including some intended to measure the terminology required by items of the Criteria Test; College Entrance Examination Board Scholastic Aptitude Test, Verbal and Mathematical part socres; American Council on Education Cooperative Reading, Speed and Accuracy part socres; Thematic Apperception Test, need Achievement, need Affiliation, and need Power; the OAIS Achiever Personality, Intellectual Quality, Creative Personality, Social Science Interest, Natural Science Interest; high school percentile rank; and psychology course grade.

The measures of achievement, ability, and motivation were adequate to provide a number of interpretable factors. It was hypothesized that the Criteria Test items would load moderately on ability and motivation factors such as verbal ability, reading comprehension, and motive for academic achievement. The achievement measures for the course included in the factor analysis provided a number of achievement factors. The loadings of the Criteria Test items on these factors were compared with their loadings on ability and motivation factors to determine if the greater part of their communality was attributable to achievement.

Results

The test for reliable and distinguishable subtests came out much as was expected on the basis of the subtest inter-correlations reported by Milholland (1964). The two subtests which had earlier shown promise, Derivation of Abstract Relations and Analysis of Elements, had 15 and 12 items, respectively, out of 20 meet the criterion of correlating higher with their own subtest score than with any other. The remaining four subtests retained 8 to 12 items, but these data provided little information since the subtests themselves were found not to be homogeneous. Since the a priori grouping did not receive empirical support, they could not provide a homogeneous basis for validating the items.

The next step was an effort to regroup the items. A typal analysis of the tetrachoric intercorrelations of all 120 items yielded only trivial diadic types, that is, pairs of items highly correlated. Three promising categories emerged early but had combined by the 94th of 7140 intercorrelations at a correlation value of .30. Two of the three corresponded to a priori objectives. The 12 items in the category corresponding to the Analysis of Elements objective were most highly intercorrelated of the three promising categories. On the average each one of the group correlated with eight of the eleven others more than with any item outside the group. However, this interrelation could be attributed to the use of three technical terms in analyzing a particular set of elements. All twelve items were specifically concerned with identifying in a simple design the independent, dependent, and the controlled variables. The other eight items on this subtest were not included in the category formed by typal analysis. The other two categories evidenced only loose structure before they merged, their items on the average matching less than one-fourth of the others in the group.

The typal analysis was repeated excluding the sixteen items having the most extreme splits, thus removing the least reliable correlations from the matrix. The results were quite similar. Six Analysis of Elements Items, only those requiring identification of independent and control variables in an experimental design, acquired the status of a type. Later in the typal analysis the category including that typal grouping was about as tightly interrelated as the corresponding category found in the analysis of all 120 items.

The groupings derived from the typal analysis were indefinite and overlapping. The validation procedure decided upon in advance recommended going on to factor analysis. The appearance in typal analysis of two categories corresponding to objectives would have been encouraging except that they could be explained by knowledge of terminology or procedure which was more specific than the scope of the taxonomy objectives.

A principal axes factor analysis was carried out on the intercorrelations of 104 items from forms X and Y of the Criteria Test. Sixteen items having extreme item splits were excluded because of the unreliability of tetrachoric coefficients for such items. To account for the estimated common variance of the correlation matrix, 22 factors were extracted. These were rotated orthogonally by the Varimax method. The first eleven, which accounted for most of the variance, were further rotated obliquely by Carroll's method. Most of the oblique axes were only slightly correlated and quite similar to the orthogonal solution but more sharply distinguished by high loadings. Item loadings of .30 or more on nine of the factors, numbered in order of amount of variance accounted for, are given in Table 1.

The most prominent factor, Factor 1, was formed by seven items requiring identification of independent and control variables in experimental designs. This grouping was found in the typal analysis also. The second factor included a definite triple representing interpretation of graphic data, but it is difficult to account for the variety of items with moderate loadings. The other items had been assigned to different objectives but they may have in common the analysis of the design of psychological experiments.

The third factor was determined by only three items, all with the same stem. This set of items required the matching of hypotheses with experimental outcomes. The data given in the stem concerned the relation of emotional shock to juvenile delinquency. Two other sets of items of the same matching type formed the seventh factor which was somewhat correlated with the third one in this oblique rotation. The data given in the stems for one of these sets related to sucking behavior in puppies and the other concerned intelligence of foster children. These two factors correspond to the cluster for this kind of item found in the typal analysis. Knowledge about heredity and environment may account for the split into two factors.

Two other factors, six and eight, divided a set of five items of one subtest, Judgements in Terms of External Criteria. Three other items of this subtest loaded on Factor 2.

The ninth factor grouped most of the items intended to test

Table 1
Factor Loadings of .30* or More of Items of Forms X and Y of the Criteria Test, Classified According to Subtests.

Subtest for the Designated Objective	Oblique Factors								
	1	2	3	4	5	6	7	8	9
2.20 Interpretation		82						-38	40
		69							36
		45							35
									34
3.00 Application					57				
					37				
					30				
4.10 Analysis of Elements	91	33							
	90								
	89								
	81								
	74								
	73								
	45								
4.20 Analysis of Relationships		34			48	41			
		31				-32			
5.30 Derivation of Abstract Relations			99	98	53		65		
			86	97			49		
			72	29			42		
							40		
							31		
6.20 Evaluation in Terms of External Criteria		47			42	66		56	
		37				45		55	
		35				45			

*No item was loaded to this extent on more than one factor.

interpretation of a brief article, but did not include other interpretation subtest items using tables, graphs or popular sayings as material. Some of these other interpretation items appeared on a tenth factor, but with other items which did not contribute to the interpretation of that factor.

The Derivation of Abstract Relations subtest included seven items which required the student to select from among four terms or concepts the one which was least related to the others. Three of these items loaded on factor four. However, the concepts or classes dealt with reflex, conditioning, and instinct, so this factor cannot be distinguished from a measure of knowledge of terms or concepts. The fifth factor included only items from personality and abnormal psychology representing four subtests; it might indicate knowledge in this one area.

In summary, this factor analysis for the intercorrelations of items from two forms of the Criteria Test does not confirm a statistical interpretation of the taxonomy of objectives. It is possible that some of the factors represent the higher level achievement intended by the taxonomy, but only within restricted areas of knowledge.

Because the clusters or factors derived from the fall data did not display the generality intended by the taxonomy and the test writers, the test papers of the spring semester were not scored by subtests. A factor analysis of the spring data was undertaken to assess the performance of individual items and groups of items. The new sample confirmed the specificity of item groupings. Interpretation of the factors was made with reference to the other variables included in the test battery. These other measures were dichotomized near the median and included with the items of Form X in a matrix of tetrachoric intercorrelations. This matrix was factor analyzed by the same procedures described for the fall data.

The results appear in Table 2 and generally support the earlier finding that the grouping of items by the Taxonomy do not produce factors. Factor 1 seems to be a general ability factor and the fact that relatively few of the items from the three psychology tests load on it may indicate that these tests are indeed tests of achievement.

Factor 2 might be called Knowledge and Application. The three Criteria Test items on it come from the Application subtest; the Knowledge Test items have to do with definitions and labels; and the Essay Test items for the most part call for providing applications and examples. The loadings of the Reading Test and Course Grade on this factor seem consistent with this interpretation.

Factor 3 is characterized by six Criteria Test items from the Analysis of Elements subtest, all of which called for identifying independent, dependent, or controlled variables in an experimental design. The seventh item came from the Judgment in Terms of External Criteria subtest and required a judgment of the researchability of a problem. The Knowledge Test item also called for knowledge of experimental variables, so the Factor 3 might be thought to deal with identifying variables in an experimental design. This would be a special case of Analysis of

Table 2
Factor Loadings of .30 or more of Items in the Criteria Test, Form X, Objective Test of Knowledge, and Essay Test and of Scores on Seven Other Variables.

Test	Orthogonal Factors					
	1	2	3	4	5	6
Criteria	60,45,37 36,34,33	41,40,33	83,80,78 61,51,40, 30	33	37,30	90,71,62 53,32,30
Knowledge	59,38	55,50,49 41,38,37 35,33	55	62,58,46 37,36,35, 32,30,30	53,48,43 38,35	32
Essay		60,55,41 34			48,48,38, 34,30	
SAT Verbal	64					
SAT Math	69					
OAIS Intellectual Quality	65					
Reading Accuracy	46	34				
Reading Speed	36	42				
OAIS Social Science Interest	-49					
Course Grade		37		32	36	

Elements, which was the subtest most clearly delineated as a factor in the earlier analysis, shown on Table 1. In the Criteria Test, then, Analysis of Elements consists largely of identifying components of an experimental design.

Factor 4 picks up all but one of its items from the Knowledge Test. Four items are from the personality area, one deals with projective tests, one with test validity definition, and one each with learning, perception, and memory. The Criteria Test item comes from the Derivation of Abstract Relations subtest and requires formulation of hypotheses about the relation of emotional trauma to delinquency. The factor might be labeled Knowledge in the Personality Area.

The five Knowledge Test items appearing on Factor 5 call for rather broad concepts, the two Criteria Test items come from the Interpretation and Judgments in Terms of External Criteria subtests, and the remaining five items are from the Essay test. It seems reasonable that all these items are getting at the kind of proficiency necessary for writing essay test items, so the factor has been labeled Essay Response.

The last factor, number 6, contains four items from the Derivation of Abstract Relations subtest of the Criteria Test, three of which require matching outcomes to hypotheses. The other item from this subtest requires determining which one of a set of four ideas does not belong with the other three. The sixth Criteria Test item comes from the Interpretation subtest and requires the student to make a judgment about the reaction the author of a given paragraph would have about a social problem which was not dealt with directly in the paragraph. The Knowledge Test item was about stimulus generalization. It seems fair to call this factor Derivation of Abstract Relations, although its scope may be somewhat narrower than the Taxonomy objective by the same name. This factor also was fairly well defined in the earlier analysis.

Discussion and Conclusions

The primary purpose of the study was to test empirically the relevance of a taxonomy of educational objectives in assessing student achievement by means of a carefully developed test of those objectives. The results suggest that although students may learn specific facts, they do not learn in terms of the "higher" objectives of the taxonomy such as analysis and evaluation in general. That is, these higher skills, if they exist at all, do not transfer. There are three considerations to be examined to evaluate the strength of this conclusion.

First, the taxonomy objectives used in developing the Criteria Test for introductory psychology represent a wide range of objectives within the taxonomy. The test constructors spread the Criteria Test subtests across all of the taxonomy's intellectual abilities and skills from interpretation to evaluation. The only area not represented is "production." Multiple choice items selected to measure this objective did not survive the item analysis of the trial forms of the test. Student achievement of this objective may be more easily measured by a constructed response format, but the validation procedure employed here requires using the same testing methods throughout the test.

The second consideration is whether the items of the Criteria Test require those behaviors described in the taxonomy, and little else. Previously the best evidence to be provided in support of such an assumption was an account of the effort expended through many revisions during test development. This test has that favorable record of "construction" validation: agreement of specialists, selection from a large item pool, item statistics from large samples, and so on. However, the validation procedure applied in this study requires more than that. Items should be compared among themselves and with external criteria of ability. In the factor analysis which included variables to mark student characteristics, only a few of the test items had high loadings on ability factors. This supports the third standard, but the loadings on factors attributed to knowledge do raise some question. For example, some items sleected to test application or analysis of relationships probably measured knowledge of terminology used in the item. If the item variance attributed to knowledge is large, it may conceal the variance attributable to the "higher objective. The sampling of the items over the content domain and difficulty range provide adequate opportunity for significant taxonomy variance to appear. However, the assumption that knowledge variance has not overshadowed significant taxonomy objectives is open to question; some implications are discussed below.

Third, it is important that students had the experiences which would allow differentiation on the dimension chosen. Some justification for assuming this to be the case may be found in the circumstance that the range of student ability, supplementary material, and teaching method was considerable for a college course. If the taxonomy distinctions are too subtle to appear in this sample of the college population, it is doubtful that they can be of much consequence in college achievement testing aside from certain heuristic benefit in labeling and improving tests.

The outcome of the study is not entirely negative, however. Although the taxonomy was not confirmed in general, the total score based on the Criteria Test appears to be a valid achievement measure which in part goes beyond straightforward knowledge of fact and terminology. Futhermore, the analysis included factors which might be identified with particular examples of the taxonomy objectives. Factor 1 from the fall data and Factor 3 from the spring data represent analysis of the elements of experiments in terms of dependent, independent and controlled variables. The items on these factors appear to require that the concepts be used in the analysis of experiments; recognition of the distinctions among the terms probably is not sufficient for a correct answer. However, this content analysis should be further checked by data from a longer achievement test. The matching of outcomes with hypotheses, fall Factors 3 and 7 and spring Factor 6, could be called the analysis of the (abstract) relation between data and conclusion for particular experimental problems. This factor also needs to be further distinguished from specific knowledge.

These item groupings provide some indication that specific skill and procedure factors representing the taxonomy in a limited domain are present in the test; they concern the analysis of experiments. The number of items on these factors provides the weighting of methodology in the Criteria Test total score. On the basis of item loadings on these and other factors the test composition might be further adjusted so that the total score represents some definite subset of the objectives of the first course in psychology.

References

Anderson, R. et al. An experiment in teaching certain skills of critical thinking. J. educ. Res., 1944, 38, 241-251.

Barnard, J. D. The lecture-demonstration versus the problem-solving method of teaching a college science course. Sci. Educ., 1942, 22, 121-132.

Bloom, B. S. (Ed.) Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook 1: Cognitive Domain. New York: Longmans, Green, 1956.

Brownell, W. A., Chairman, Henry, N. B. (Ed.) The measurement of understanding. Yearb. nat. Soc. Stud. Educ., 1946, 45, Part I.

Campbell, D. T. and Fiske, D. W. Convergent and discriminant validation by the multitrait-multimethod matrix. Psychol. Bull., 1959, 56, 81-105.

Carroll, J. B. The nature of the data, or how to choose a correlation coefficient. Psychometrika, 1961, 26, 347-372.

Cronbach, L. J. and Meehl, P. Construct validity. Psychol. Bull., 1955, 52, 281-302

Dressel, P. L. and Mayhew, L. B. General Education - Explorations in Evaluation. Washington, D. C.: American Council on Education, 1956.

Ferguson, G. A. The factorial interpretation of test difficulty. Psychometrika, 1941, 6, 323-329.

Furst, E. J. Effect of the organization of learning experiences upon the organization of learning outcomes. J. exp. Educ., 1950a, 18, 215-228, 343-352.

Furst, E. J. Relationship between tests of intelligence and tests of critical thinking and knowledge. J. educ. Res., 1950b, 43, 614-625.

Gagne, R. M. The analysis of instructional objectives for the design of instruction. In R. Glaser (ed.) Teaching Machines and Programed Learning, II: Data and Directions. Washington: National Education Association. 1965.

Guilford, J. P. The structure of intellect. Psychol. Bull., 1956, 53, 267-293.

Guilford, J. P. Three faces of intellect. *Amer. Psychologist*. 1959, *14*, 469-479.

Harman, H. F. *Modern Factor Analysis*. Chicago: University of Chicago Press, 1960, pp. 261-336.

Horrocks, J. E. and Troyer, M. E. Case study tests of ability to use knowledge of human growth and development. *Educ. Psychol. Measmt*. 1947, *7*, 23-36.

Johnson, D. M. and Smith, H. C. Democratic leadership in the colllege classroom. *Psychol. Monog*., 1953, 67 #11 (whole #361).

Kendall, M. G. Advanced theory of statistics. Vol. 2. *Testing Inferences*. New York: Hafner, 1961.

McQuitty, L. L Typal analysis. *Educ. Psychol. Measmt*., 1961, *21*, 677-696.

Milholland, J. E. Measuring cognitive abilities. Section II-A in McKeachie, W. J., Isaacson, R. L., and Milholland, J. E. *Research on the Characteristics of Effective College Teaching. Final Report: Cooperative Research Project No. OE850, U. S. Office of Education and The University of Michigan*. Ann Arbor: Department of Psychology, The University of Michigan, 1964.

Peak, Helen. Problems of objective observation. In Festinger, L. and Katz, D. *Research Methods in the Behavioral Sciences*. New York: Dryden Press, 1953, pp. 243-299.

Rostler, L. E. The measurement of teaching ability. Study No. 1. *J. exp. Educ*., 1945, *14*, 6-51.

Smith, E. R. and Tyler, R. W. *Appraising and Recording Student Progress*. New York: Harper, 1942, pp. 3-156.

Stolurow, L. M. *A Taxonomy of Learning Task Characteristics*. *Tech. Doc. Report No. AMRL-TOR-64-2*. Wright Patterson AFB: Behavioral Sciences Laboratory, 1964.

Vernon, P. E. The determinants of reading comprehension. *Educ. Psychol. Measmt*. 1962, *22*, 269-286.

Watson, B. and Glaser, E. M. *Watson-Glaser Critical Thinking Appraisal*. New York: World Book, 1952.

APPENDIX

1. Table A
   Identification and description of items of Forms X and Y of the Criteria Test which loaded on the various factors in the Fall Semester analysis.

2. Table B.
   Identification and description of items of Form X of the Criteria Test, the Objective Test of Knowledge, and the Essay Test which loaded on the various factors in the Spring Semester analysis.

3. Objective Tests of Knowledge and Essay Tests.

4. Introductory Psychology Criteria Test, Form X.

5. Introductory Psychology Criteria Test, Form Y.

APPENDIX

Table A
Oblique Factors in the Items of Forms X and Y of the Criteria Test

Factor No.	Test Form	Item No.	Taxonomy Objective	Loading	Item Format	Item Content
1	X	4	4.10	91	identify variable	independent
1	X	47	4.10	90	identify variable	independent
1	Y	40	4.10	89	identify variable	independent
1	X	45	4.10	81	identify variable	control
1	X	7	4.10	74	identify variable	control
1	Y	38	4.10	73	identify variable	control
1	Y	21	4.10	45	identify variable	independent
2	Y	16	2.20	82	judge graphic data	fears of children
2	Y	19	2.20	69	judge graphic data	fears of children
2	Y	3	6.20	47	judge criticism of exp.	control in teaching res.
2	Y	17	2.20	45	judge graphic data	fears of children
2	Y	55	6.20	37	judge researchability	prediction
2	Y	5	6.20	35	judge criticism of exp.	control in teaching res.
2	Y	1	4.20	34	data & conclusions	age and IQ correlation
2	X	3	4.10	33	conclusion & assumptions	shock therapy
2	Y	25	4.20	31	judge support by data	anxiety in mothers
3	X	42	5.30	99	hypothesis & outcomes	delinquency & trauma
3	X	41	5.30	86	hypothesis & outcomes	delinquency & trauma
3	X	43	5.30	72	hypothesis & outcomes	delinquency & trauma
4	X	59	5.30	98	identify odd one	examples of UCR
4	Y	60	5.30	97	identify odd one	UCR
4	X	58	5.30	29	identify odd one	examples of "instinct"
5	Y	52	3.00	57	example & labels	defense mechanism
5	X	56	5.30	53	identify odd one	defense mechanism
5	X	28	4.20	48	problem & solutions	measuring unverb. motives
5	X	10	6.20	42	questions & judgements	mental health

Table A continued

Factor No.	Test Form	Item No.	Taxonomy Objective	Loading	Item Format	Item Content
5	Y	53	3.00	37	examples and labels	defense mechanisms
5	X	32	3.00	30	statement & reasons	repression & forgetting
6	X	18	6.20	66	judge researchability	income and soc. adapt.
6	X	19	6.20	45	judge researchability	ESP
6	X	23	6.20	45	judge researchability	memorizing and soc. adapt.
6	Y	9	4.20	41	judge "support by data"	clinical judgements
6	Y	10	4.20	-32	judge "support by data"	clinical judgements
7	Y	44	5.30	65	hypothesis & outcomes	IQ, foster children
7	Y	45	5.30	49	hypothesis & outcomes	IQ, foster children
7	Y	46	5.30	42	problem-data & hypoth.	IQ, foster children
7	Y	43	5.30	40	hypothesis & outcomes	IQ, foster children
7	Y	28	5.30	31	hypothesis & outcomes	sucking in puppies
8	Y	56	6.20	56	judge researchability	mind training
8	Y	57	6.20	55	judge researchability	animal perception
8	Y	32	2.20	-38	judge graphic data	distributions of scores
9	X	14	2.20	40	iden. point of view	family and culture
9	X	16	2.20	36	iden. point of view	family and culture
9	X	13	2.20	35	iden. point of view	family and culture
9	X	17	2.20	34	iden. point of view	family and culture

Table B
Orthogonal Factors in the Analysis of Achievement Test Items and Student Characteristics

Factor No.	Test*	Item No.	Taxonomy Objective	Loading	Item Format	Item Content
1						
Achievement Test Items						
	C	37	4.10	60	conclusion & assumptions	psychiatric diagnosis
	K	14		59	concept & examples	corr. coef. and rela.
	C	48	4.20	45	judge "support by data"	maturation & training
	C	53	2.20	36	judge "support by data"	tabled data (morale)
	C	3	4.10	37	conclusion & assumptions	shock therapy
	K	13		38	label & interpretations	significant result
	C	26	3.00	34	situation & opinions	counseling
	C	39	2.20	33	proverb & examples	selection in perception
Student Characteristics						
SAT Math				69		
OAIS Intellectual Quality				65		
SAT Verbal				64		
Reading Accuracy				46		
Reading Speed				36		
OAIS Social Science Interest				-49		
2						
Achievement Test Items						
	E	2		60	write appl. or example	perceptual constancy
	E	4		55	write appl. or example	standard score
	K	1		55	label & definitions	domain of study
	K	8		50	label & definitions	savings retention
	K	6		49	label & definitions	experimental extinction

*C = Criteria Test, Form X
E = Essay Test
K = Objective Test of Knowledge

Table B continued

Factor No.	Test	Item No.	Taxonomy Objective	Loading	Item Format	Item Content
2						
Achievement Test Items						
	K	2		41	label & definitions	criterion for sci. data
	E	7		41	list steps for test	bias and optical illusion
	C	1	3.00	41	example & labels	mental health & anxiety
	C	2	3.00	40	example & labels	perceptual constancy
	K	13		38	label & definitions	significant result
	K	9		37	label & examples	associative thinking
	K	15		35	label & definitions	test validity
	E	1		34	write appl. or sample	secondary reinforcement
	K	11		33	definition & terms	mot. disposition in ps-a
	C	9	3.00	33	example & labels	stimulus generalization
Student Characteristics						
Reading Speed				42		
Grade				37		
Reading Accuracy				34		
3						
Achievement Test Items						
	C	4	4.10	83	iden. independent var.	noise & rat eating
	C	47	4.10	80	iden. independent var.	memorization
	C	5	4.10	78	iden. dependent var.	noise & rat eating
	C	46	4.10	61	iden. dependent var.	memorization
	K	12		55	definition & label	independent variable
	C	45	4.10	51	iden. controlled var.	memorization
	C	7	4.10	40	iden. controlled var.	noise & rat eating
	C	25	6.20	30	judge researchability	intelligence of ants & frogs
Student Characteristics				(All loadings less than 30.)		
4						
Achievement Test Items						
	K	20		62	definition & labels	reaction formation
	K	18		58	concept & functions	emotions

Table B continued

Factor No.	Test	Item No.	Taxonomy Objective		Item Format	Item Content
4						
Achievement Test Items						
	K	16		46	concept & char.	projective techniques
	K	23		37	definition & labels	closure
	K	19		36	concept & functions	defense mechanism function
	K	9		35	label & examples	associative thinking
	C	40	5.30	33	outcome & hypotheses	delinquency & trauma
	K	15		32	label & definitions	test validity
	K	7		30	label & examples	proactive inhibition
	K	3		30	definition & label	visual organization
Student Characteristics						
Grade				32		
5						
Achievement Test Items						
	K	17		53	label & definitions	definitions of personality
	E	7		48	list steps for test	bias and optical illusions
	E	3		48	write appl. or example	operant conditioning
	K	22		48	concept & char.	normal distribution
	K	15		43	label & definitions	test validity
	E	1		38	write appl. or example	secondary reinforcement
	K	23		38	definition & labels	closure
	C	13	2.20	37	interp. paragraph	family and culture
	K	1		35	label & definitions	domain of study
	E	6		34	state assumptions	ach. motive, grades, marr.
	E	5		30	write appl. or example	regression
	C	24	6.20	30	judge researchability	orientation of visual per.
Student Characteristics						
Grade in course				36		

Table B continued

Factor No.	Test	Item No.	Taxonomy Objective	Loading	Item Format	Item Content
6						
Achievement Test Items						
	C	42	5.30	90	outcome & hypotheses	delinquency & trauma
	C	41	5.30	71	outcome & hypotheses	delinquency & trauma
	C	43	5.30	62	outcome & hypotheses	delinquency & trauma
	C	2	3.00	53	example & labels	perceptual constancy
	C	56	5.30	32	odd one out	defense mechanisms
	K	5		32	definition & labels	stimulus generalization
	C	17	2.20	30	interp. paragraph	family and culture

6

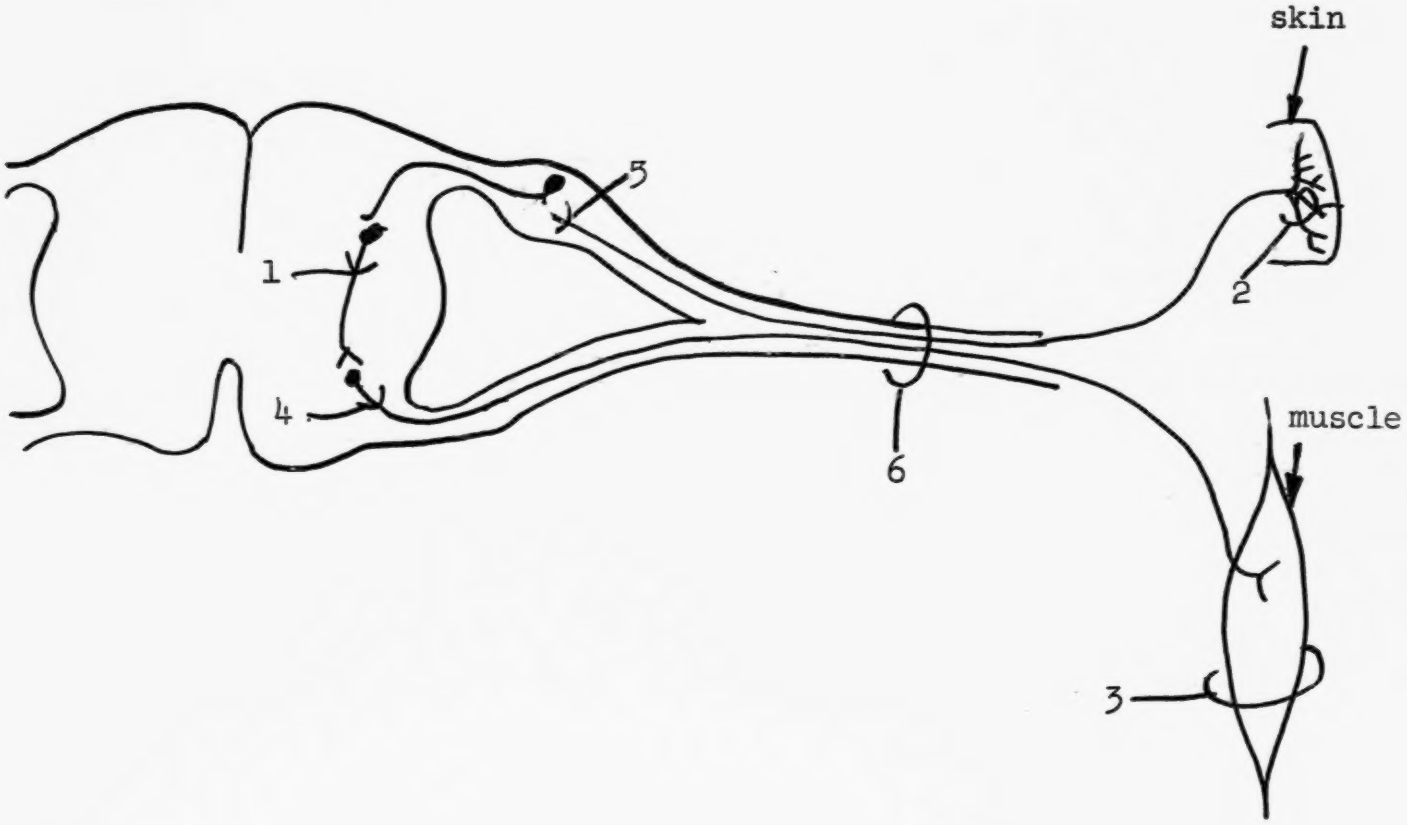
Psychology 100
Final Exam

1. Which of the following are characteristic of the nerve impulse along the axon?
    a. all or none action
    b. refractory period
    c. conduction at constant velocity
    d. summation

2. Which of the following events would result from electrical stimulation of the midbrain reticular formation?
    a. the perception of splotches of color
    b. arousal from sleep
    c. the arousal of a memory
    d. de-synchrony in the EEG

3. Which of the following activities and/or structures are importantly involved in the spatial and temporal integration of behavior?
    a. summation
    b. the cell body
    c. theoretical cell assemblies
    d. the myelin sheath

4. Using the following diagram of a reflex identify each of the following structures as:
    a._____afferent neuron
    b._____efferent neuron
    c._____internuncial neuron
    d._____effector
    e._____receptor
    f._____peripheral nerve



5. Indicate which of the following terms refer to inferred concepts by circling the preceding letter.
   a. habit
   b. drive
   c. axon
   d. bar press
   e. reticular formation
   f. engram
   g. intelligence
   h. mediating process
   i. phase sequence

6. Which of the following procedures would be profitable if we wished to infer the properties of hue perception in a "color-blind" human subject?
   a. Ask the subject what colors he can see.
   b. Ask the subject to name the color of various colored objects such as blood, leaves, the sky, daffodils and the like.
   c. Ask the subject to sort a collection of objects, such as pieces of dyed yarn which are different only in their hue, into categories of equivalent color.
   d. Ask the subject to select colors from a color chart which match the hue of various stimulus objects.

7. If we wished to place a behavior on the continuum between sense dominated and mediated, which of the following questions might we ask?
   a. What is the time interval between stimulus and response?
   b. Is the animal human or sub-human?
   c. Is the response to a particular stimulus constant from trial to trial?
   d. Is there a specifiable adequate stimulus which elicits the response?

8. Which of the following properties can be taken as definitive of instinctive behavior?
   a. The behavior is in no way influenced by any kind of past experience.
   b. The behavior is predictable for any member of a given species in his natural habitat.
   c. The behavior is extremely simple, resembling a reflex.
   d. The behavior occurs only in lower animals.

9. Studies have shown the importance of early experience for
   a. pattern vision
   b. mate selection in geese
   c. the response to ordinarily painful stimuli
   d. color discrimination

10. Intelligence is
   a. approximately 55% hereditary, 45% environmental
   b. an inference from behavior
   c. unchangeable after the fifth year of life according to I.Q. test results
   d. an inherited capacity that can be measured accurately by the Stanford-Binet test.

11. A major difficulty in most attempts to describe human behaviors (such as pursuit of money) as higher order conditioning is:
    a. This kind of conditioning is not possible in lower animals
    b. It is difficult to obtain experimentally and extinguishes rapidly
    c. Conditioned inhibition would rapidly extinguish the old response

12. The same stimulus
    a. may have both a cue function and an arousal function
    b. always necessarily leads to the same perception
    c. may serve in the position of UCS in higher order conditioning as well as being CS in first order conditioning
    d. always elicits the same response

13. Studies of sensory deprivation show that
    a. getting paid for doing nothing is easy money
    b. the brain does not function normally when stimulus change is eliminated
    c. stimulus change is a secondary reinforcer
    d. man differs from lower animals in that he alone has a need for stimulus change

14. Hebb's studies of fear show that
    a. perceptions conflicting with expectations may be frightening
    b. all human beings fear snakes
    c. all fears are instinctive
    d. certain fears develop as the result of maturation

15. In Pavlov's classical conditioning
    a. the UCR is originally elicited by the CS
    b. the CR and UCR are really identical
    c. learning is inferred from the sequence CS-CR
    d. the extinction procedure consists of removing the UCS while still presenting the CS

16. Which of the following are true of homeostatic drives?
    a. There is a drive for every human need.
    b. Drive reduction never requires the operation of a learned behavior.
    c. Hunger, thirst and sex are all examples of homeostatic drives.
    d. They provide one mechanism for keeping the internal environment of the body within an optimum range.

17. To give the impression of depth in a flat painting, the artist
    a. makes use of binocular depth cues
    b. must overcome his own tendency toward size, shape, and color constancy
    c. makes use of the size constancy tendencies in the observer by drawing more distant objects smaller.
    d. must depend on the willing gullibility of the observer.

18. A perception
    a. is an unbiased representation of our environment
    b. may depend on the simultaneous activity of many sense organs
    c. is a sensory phenomenon and therefore independent of feedback from motor responses
    d. has been demonstrated to be more dependent on heredity than environment
    e. has been demonstrated to be more dependent on environment than heredity.

19. a. How would you demonstrate the operation of a holding mechanism? Give an example of a "holding mechanism" at work.
    b. What neurophysiological hypotheses would Hebb offer to account for the "holding" phenomenon?

20. What areas of the brain other than the visual cortex are important for the psychological phenomenon of "seeing"? Can we say that any psychological function is strictly localized?

21. Psychology is generally understood to be the study of human behavior. For what reasons do psychologists use lower animals in psychological research?

22. What factors other than heredity contribute to high performance on intelligence tests? Support your answer with evidence.

23. What would you need to know in order to answer the question: Why do male dogs select female dogs for mates?

24. How is Hebb's arousal theory of reinforcement different from Hull's idea of primary drive-reduction?
    a. In what sense does Hebb's theory encompass the drive-reduction idea?
    b. What new data can Hebb's theory incorporate that gives Hull difficulty?

25. What evidence do we have that perception involves mediating processes as well as receptor processes?

Psychology 101 Final - Part I (15 minutes)
Spring Semester, 1963

Circle the letter for the one best alternative.

1. Psychology is appropriately called a study of
   a. mind
   b. behavior
   c. individual characteristics
   d. man

2. An important criterion for judging scientific data is whether it is
   a. logical
   b. understandable
   c. obtained in a laboratory
   d. obtained under controlled conditions

3. The most basic organization of visual perception appears to be
   a. closure
   b. figure and ground
   c. similarity of components
   d. proximity of parts

4. Binocular perception of depth depends on
   a. fusion
   b. movement
   c. perspective
   d. superposition

5. When a stimulus similar to the conditioned stimulus elicits the conditioned response the phenomenon is called
   a. partial reinforcement
   b. secondary reinforcement
   c. stimulus generalization
   d. response generalization

6. In experimental extinction the
   a. conditioned stimulus is intermittently left unreinforced
   b. conditioned response is physically restrained
   c. conditioned trace
   d. unconditioned stimulus is repeatedly omitted

7. Proactive inhibition is very similar to
   a. retroactive inhibition
   b. transfer of training
   c. interference forward in time
   d. motivated forgetting

8. An absolute savings score is a measure of retention obtained by the method of
   a. recall
   b. relearning
   c. rearrangement
   d. recognition

9. A clear example of associative thinking is
   a. problem solving
   b. daydreaming
   c. concept formation
   d. formal logic

10. One approach to motivation identifies a lack or deficit within the individual as
   a. a need
   b. a drive
   c. an affect
   d. an incentive

11. One of the motivational dispositions prominent in the system of psychoanalysis is
   a. exploration
   b. aggression
   c. manipulation
   d. hunger

12. In an experiment employing experimental and control groups, the treatment of the experimental group is exactly like the control group except for exposure to the
   a. uncontrolled variables
   b. dependent variable
   c. independent variable
   d. dependent and independent variables

13. In the report of a psychological experiment the term "significant result" probably should be interpreted as a result which is
   a. important for this experiment
   b. worth studying further
   c. of probability less than .01
   d. not likely by chance

14. Of the following correlation coefficients the smallest amount of relationship is indicated by
   a. .67
   b. .02
   c. -.46
   d. -.85

15. For a test to be valid it is sufficient that it
   a. gives consistent results on different occasions
   b. can be scored by two or more persons with agreement
   c. correlates with a relevant criterion
   d. logically corresponds with meaningful personality characteristics

16. An important characteristic of projective techniques is that
   a. the test materials are ambiguous and have no definite answers
   b. the scoring procedures are more objective than those for ordinary psychological tests
   c. they measure functional behavior in miniature life situations
   d. they do not rely on the subject's verbal responses

17. For psychologists, personality generally refers to
    a. the ways in which a person behaves in many situations
    b. how much a person is liked, as measured by personality traits
    c. the unique organization of qualities that distinguish persons

18. Emotions never function
    a. adaptively
    b. without affective tone
    c. as drives
    d. as goals

19. Defense mechanisms cannot serve to
    a. handle frustration consciously
    b. protect self esteem
    c. reduce conscious anxiety
    d. contribute to satisfactory adjustment

20. The tendency to conceal a motive from oneself by expressing another in opposition is called
    a. projection
    b. displacement
    c. rationalization
    d. reaction formation

21. The primary reason for anger is
    a. tension
    b. surprise
    c. frustration
    d. diffuse excitement

22. A normal distribution
    a. is always symmetric about the mean
    b. is defined by cultural standards
    c. occurs whenever a sample is random
    d. implies randomness in personal adjustment patterns

23. The tendency for incomplete patterns to become complete in perception of persons is called
    a. proximity
    b. similarity
    c. continuity
    d. closure

24. Hilgard characterizes an attitude as
    a. a prediction of outcomes
    b. an expectation about consquences
    c. an orientation with respect to something
    d. a preference for a certain object

25. A major difficulty in national opinion polling is
    a. obtaining opinions from enough people
    b. arranging for representative sampling
    c. finding enough well trained interviewers
    d. writing unambiguous questions

Part II

Think about each question long enough to pick out the essential points and organize your thoughts. A brief list or sketchy outline well thought out is the form of answer appropriate here. Limit yourself to the space provided for each answer.

1. For each of these five psychological concepts indicate an application or example (not a definition) in the area of human behavior. (10 minutes)

   secondary reinforcement (motivation and learning)

   perceptual constancy (perception)

   operant conditioning (learning)

   standard score (measurement)

   regression (personality)

2. A psychologist at a university noted that in all his classes the married students as a group obtained significantly better grades than all others. He decided to test the hypothesis that married college students achieve higher grades on the average because they are better motivated for achievement. He wrote a questionnaire to measure achievement motive and had all his spring semester classes fill out the questionnaire. He found that the married students as a group got higher achievement motive scores than all others.

   What assumptions must he make before he can conclude that these data support his hypothesis? (10 minutes)

3. List the major steps necessary for testing the hypothesis given below. Do not design an experiment in detail.

   "Persons who are inclined toward bias and prejudice tend to be more susceptible to optical illusions than persons who are very tolerant of minority groups." (10 minutes)

4. Psychologist from different areas of specialization often take different approaches to a given problem. Consider the problem of understanding and perhaps helping junior high school "problem boys" who are failing most courses as well as causing trouble in the classroom.

4. Continued

Pick one theorist (or type of theory) from the area of personality and one from the area of learning. List two or three essential differences you would expect to find between the two approaches to the above problem. Then list a few similarities. You may want to consider the kind of information the psychologist would want to have about the school, the boys, their families, etc.

	personality theorist:	learning theorist:
ESSENTIAL DIFFERENCES IN APPROACH		
SIMILARITIES IN APPROACH		

INTRODUCTORY PSYCHOLOGY CRITERIA TEST

FORM X

THE UNIVERSITY OF MICHIGAN
DEPARTMENT OF PSYCHOLOGY

and

COMMITTEE ON CRITERIA FOR THE FIRST COURSE
OF THE DIVISION ON TEACHING OF THE AMERICAN
PSYCHOLOGICAL ASSOCIATION

with support from

OFFICE OF EDUCATION, U.S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE
O.E. CONTRACT #SAE-8541

ugust 1962

1. Jane has always been extremely homesick whenever she was away from her parents. After graduation from high school she attended a large university over 200 miles from her home but became so depressed and homesick she had to leave. She is now living at home and happily attending a local college.

   1. This situation was handled by lowering the level of adjustment that the individual felt was necessary to cope effectively with the situation.
   2. This tension-producing situation was handled by making the individual feel better able to handle the situation.
   3. This indicates an escape or avoidance of the problem; i. e., the individual has not really solved the basic problem.
   4. This is not an anxiety-producing situation for the person.

2. A tree 100 yards away may project an image on the retina no larger than that of a toothpick a foot away. Despite this fact, the tree is perceived as being quite large. This paradox is most closely related to which of the following?

   1. We become adapted to ignore certain aspects of our environment and these aspects will be defined largely by our cultural background.
   2. Knowing a magician's trick destroys the illusion.
   3. The size of the retinal image is a direct function of the size of object and an inverse function of the distance of the object.
   4. Snow looks white even in poor illumination.

3. In the study described below, which assumption was implicitly made by the investigator in arriving at his conclusions? (In other words, what assumption would one have to make in order to arrive at the conclusion he reached?)

   A psychiatrist found that 90% of the patients receiving electro-shock treatment for involutional melancholia recovered within three weeks. He concluded that the treatment was useful in the treatment of this disease.

   Assumptions:

   1. No other type of treatment would have been as effective.
   2. No patients would have recovered in three weeks without the treatment.
   3. Involutional melancholia must be an organic disease if it can be treated with physical methods.
   4. Electro-shock is more appropriate than other forms of treatment for this disease.
   5. Less than 90% would have recovered in three weeks without treatment.

Questions 4 through 7 concern the following:

An experiment was designed to determine whether noise will affect the amount of food rats will eat in a given period. Two groups of twenty male rats, matched according to age, weight, and health, were chosen. For four weeks one group of rats was subjected to a loud noise while feeding and the other group was fed under regular conditions. The amount of food given each rat was carefully weighed before each feeding and the amount uneaten was weighed after each feeding.

Pick the correct answer for each question from the following key:

1. The amount of time the rats took to eat.
2. The loud noise.
3. The amount of food eaten.
4. The emotionality of the rats.
5. The weight of the rats.

4. The independent variable is:

5. The dependent variable is:

6. An uncontrolled variable of possible importance is:

7. A controlled variable is:

* * * * * *

8. In an experiment to determine the influence of caffeine on learning ability, equal numbers of male and female subjects were used in the experimental and control groups. Constituting the groups in this manner illustrates

    1. The dependent variable.
    2. That sex is assumed to have little to do with learning ability.
    3. A controlled variable.
    4. Non-random sampling.

9. You say "Hi Joe," to someone who on second glance turns out to be a complete stranger. This is an example of:

   1. Response generalization.
   2. Serial position effect.
   3. Competing response.
   4. Avoidance conditioning.
   5. Stimulus generalization.

10. Which of these statements is the best advice from the standpoint of good mental health?

    1. Face situation without involvement.
    2. Accept your own feelings as something natural and normal.
    3. Avoid conflicts.
    4. Try not to think about your problems.
    5. Don't worry pointlessly about problems.

11. You find upon returning home from work that Bosco, your new cocker spaniel puppy, has wet the carpet. You decide to punish him now for his breach of etiquette. You do this time after time. Bosco never becomes housebroken. Which of the following conditions of learning has not been met?

    1. Reinforcement
    2. Repetition
    3. Set
    4. Contiguity

12. A certain professor preferred to keep his watch in his vest pocket but his wife thought him old-fashioned and transferred the watch to his trousers pocket each morning. Although for a while he continued to fumble in his vest pocket when he wanted to know the time, he eventually made the correct movement.

    The most appropriate term to describe this behavior is:

    1. Avoidance conditioning
    2. Discrimination
    3. Stimulus generalization
    4. Spontaneous recovery
    5. Experimental extinction

Answer questions 13 through 17 by referring to the following selection to discover the author's point of view:

> "Customs enshrined in the family in any tribe or nation are likely to be sensitively adjusted to the values and customs of each particular people. This is no mystic correspondence; the persons who make up the family are the same people who are the citizens of that nation-the businessmen, the farmers, the churchgoers or non-churchgoers, the readers of newspapers and the listeners to the radio. In all their roles they are molded more or less surely into a people with certain habits, certain hopes, and a certain esprit de corps. Americans come to share certain slogans, behavior, and judgments which differ from those of Frenchmen or Czechs. This is inevitable. And in the process the role of the family also becomes different. By the same token, just as economic and political changes occur over a period of time in the United States or in France or in Czechoslovakia, the family also changes."

13. To the author, the authoritarian family in the United States:

    1. Is more prevalent than any other type.
    2. Is necessary if the family as an institution is to be preserved.
    3. Is the most persistent form of family organization.
    4. Is merely an ideal.
    5. Would be out of harmony with our other institutions.

14. If the author were to study the family in a particular culture, she would probably be most concerned with:

    1. The internal power structure.
    2. Its performance of the traditional functions of the family.
    3. Its consistency with the general way of life.
    4. The relative freedom granted to individual members.
    5. The place of the family in the general culture pattern.

15. In a dynamic society such as the United States the changes which have taken place in the family are:

    1. A consequence of the amalgamation of other cultures.
    2. Generally improvements.
    3. The cause rather than the result of other social changes.
    4. Relatively slow.
    5. To be expected.

(continued)

16. To the author "failure of the family" would probably:

    1. Accurately describe American society.
    2. Be reflected in our rising incidence of mental illness.
    3. Have no absolute meaning.
    4. Be the cause of most of our social ills.
    5. Be more true of America than France.

17. The author probably would be inclined to view our high divorce rate as a product of our:

    1. Lax divorce laws.
    2. Economic tensions.
    3. Marriage laws.
    4. Weakened moral standards.
    5. Emphasis on individualism.

Mark questions 18 through 25 in accordance with the following key:

1. If the problem is capable of empirical solution as stated.
2. If the problem requires some reformulation in order to be tested.
3. If the problem is by its very nature non-empirical and thus incapable of solution on the basis of factual evidence.

18. Children from high-income families are more likely to develop social adaptability than children from low-income families.

19. Can a randomly selected group without any special training communicate messages without the usual sensory and physical channels?

20. Is light punishment the best way to discipline children?

21. Is it wrong to spank children?

22. Are amoebae capable of learning to move toward a source of light although they have no natural tendencies to do this?

23. Is ability to memorize correlated with social adaptability?

24. Since the images on our retinae are upside down do we really perceive everything upside down without realizing it?

25. Are ants as intelligent as frogs?

26. Joan is convinced that one of her instructors "has it in for her" and is trying to make her flunk his course. Her hall adviser has had difficulty in changing this idea even though there is apparently excellent evidence to the contrary. It would be most helpful if the hall adviser first asked herself:

1. What evidence does Joan have?
2. What motive does Joan's idea satisfy?
3. Could this be something psychological?
4. What kind of evidence might change her opinion?

27. When a satiated animal is placed in a cage with another animal of the same species who is eating, the satiated animal begins to eat. This behavior indicates that:

1. Hunger is not the sole determinant of eating behavior.
2. Animals are naturally competitive.
3. Animals are naturally imitative.
4. Satiation, like deprivation, increases the level of motivation.
5. None of the above.

28. The technique that would be most promising for assessing unconscious or unverbalizable desires and motives is, for the reason given:

1. Observation of expressive movements because they are unlearned.
2. Inference from body type because the method is objective and not prone to subjective error.
3. Projective tests because they are indirect methods and use ambiguous stimuli and unrestricted response.
4. Personality inventories because they are difficult to falsify.
5. None of these.

Use the following list of defense mechanisms to characterize the behaviors described in questions 29 and 30.

1. Phobia
2. Regression
3. Delusion
4. Obsession
5. Repression

29. Mr. Smith's work suffers because he is constantly thinking about an unpleasant experience which resulted from a foolish but not malicious blunder he made.

30. Whenever there is a forecast of rain, John is haunted by the idea that the windows are open and constantly checks them even though he knows he put them down.

31. Which of the following most readily lends itself to experimental investigation?

    1. The effect of lighting on efficiency.
    2. The meaning of dreams.
    3. The effect of home environment upon mental illness.
    4. The behavior of the queen bee.
    5. Public opinion.

32. A feature of repression that makes it important in the understanding of forgetting is that:

    1. It shows recognition to be more difficult than recall.
    2. It shows that some forgetting is motivated.
    3. It is a way of escaping an unpleasant situation.
    4. Forgetting does not occur for events tinged with emotion.

Questions 33 through 36 concern the following:

> Below is a proposition about a psychological problem. Underneath the proposition are some statements about the results of investigations. All of those statements are true. Your job is to determine for each statement whether the statement tends to support the proposition, tends to refute it, or is irrelevant to it.
>
> Mark 1 if the statement tends to support the proposition.
> Mark 2 if the statement tends to refute the proposition.
> Mark 3 if the statement is irrelevant to the proposition.
>
> Proposition: Environment is the primary determinant of I. Q.

33. The I. Q. 's of identical twins reared apart are more similar than those of fraternal twins reared together.

34. The I. Q. 's of Negro boys showed a consistent positive relationship with the number of years they had lived in the city.

35. The correlation between the I. Q. 's of children and their foster parents is lower than the correlation between the I. Q. 's of the same children and their real parents.

36. Intelligence test scores are distributed normally in the population.

37. Indicate which one assumption was implicitly made by the investigator in arriving at his conclusion. (In other words, what assumption would one have to make in order to arrive at the conclusion which the author reached?)

    A mental patient was brought to the hospital with symptoms of hallucinations. On the basis of this alone, he was diagnosed schizophrenic by the examining intern:

    Assumptions:
    1. All schizophrenics show hallucinations.
    2. Most people who show hallucinations are schizophrenic.
    3. Schizophrenics often show hallucinations.
    4. It is necessary to know something about a patient's history in addition to his present symptoms in order to arrive at a diagnosis.

38. Billy, aged 6, was full after finishing an enormous Fourth of July dinner including his favorite dessert, deep-dish apple pie. However, when he heard the familiar tinkle of the ice cream man's warning bell as his truck turned the corner, Billy ran to his Dad crying, "Can I have an ice-cream sandwich?" This is an example of which of the following:

    1. Cues in the environment which can motivate behavior.
    2. Secondary reinforcement.
    3. Biological drives which activate behavior are not stable.
    4. Regression.
    5. Irrational drives.

39. "A way of seeing is also a way of not seeing." Which of the following is not an illustration of this proposition?

    1. When we listen to our friend's conversation we don't hear other things.
    2. We see a physically bright light as brighter than a physically dim light.
    3. When hungry we see food objects, when sexy we see sex objects.
    4. We see a certain cluster of stars as a constellation, the Big Dipper.
    5. All of the above are illustrations of the proposition.

Questions 40 through 44 concern the following:

> The problem has been set and data have been collected. You are first to match each hypothesis in Section A with the experimental outcome in Section B which best supports it. Secondly you are to select the hypothesis and matching experimental outcome which you think best explains the problem and data.

Problem: What is the relation of emotional shock or trauma to juvenile delinquency?

Data: One hundred and five pairs of delinquent and non-delinquent children, each pair from the same family, were interviewed. Subjects were residents of New Haven, Detroit and Boston. In 91% of the cases, it was determined that the delinquent child of the pair had suffered some emotional shock or disappointment not suffered by the non-delinquent member of the pair.

A. Hypotheses

a. Delinquency is directly traceable to emotional shock and not to slums and poverty.
b. Delinquency can be traced largely to hereditary differences.
c. Delinquency is due to differences in training of children as between different families.
d. Delinquency is largely due to lack of educational and environmental opportunity.

B. Experimental outcomes

1. A sample of orphan children of delinquent parents showed more delinquency than was present in a sample of orphan children with normal parents.
2. Examination of records of delinquents showed that in many cases a severe emotional shock was present in the background of the subject.
3. A random sample of children from the lower-income bracket, and a random sample of children from the upper-income bracket, with both groups equated as to emotional shocks, showed a higher delinquency rate for the former group.
4. The delinquency rate among children of foreign-born parents was higher than the rate among children of native parents.

Mark the number of experimental outcome that best supports each hypothesis.

40. Hypothesis a.
41. Hypothesis b.
42. Hypothesis c.
43. Hypothesis d.

44. The hypothesis and experimental outcome which best explain the given problem and data are in item:

1. Number 40.
2. Number 41.
3. Number 42.
4. Number 43.

Questions 45, 46, 47 concern the following:

Forty subjects were matched in pairs on I. Q. scores. One of each pair practices for two hours on memorizing a ten-stanza poem. The other member of the pair practices one hour on the same materials. Twenty-four hours after the practice session, all subjects then were tested for the amount of the poem they remembered.

Pick the correct answer for each question from the following key:

1. I. Q.
2. Practice time.
3. Length of poem.
4. Amount of poem remembered.
5. Familiarity with poem.

45. The major controlled variable is:

46. The dependent variable is:

47. The independent variable is:

Questions 48, 49, 50 concern the following:

A group of three-year-old children were given practice for three months in tapping and in gripping and pulling. Other children matched with these children in all other things, were given no practice at all during the three months. At the end of this period, all children who had been practicing did better than the other children in all three performances. Another three months elapsed, during which none of the children had any practice. When tests of tapping and pulling were given, the children who had no practice did practically as well as those who had previously had some practice. Both groups had improved. However, in tests of the strength of grip, the practiced children maintained their advantage.

(continued)

Instructions: For each of the following statements mark:

1 if the statement is supported by the data.
2 if the statement is contradicted by the data.
3 if the statement is a plausible hypothesis on the basis of the data but is neither supported nor contradicted.
4 if the statement is irrelevant to the data.

48. Training young children in physical activities makes them lastingly better in those activities than untrained children.

49. In some activities maturation as well as training brings about skill.

50. The relative strengths of maturation and training in developing skills vary with different activities.

* * * * * * * *

Items 51 to 54 are based on the data in the table below. Mark your answers according to the following key:

1. True statement, supported by the data directly or by inference.
2. Insufficient data to come to this conclusion.
3. False statement, contradicted by the data directly or by inference.

Relative importance for employee morale	As Ranked by Employee	As Ranked by Employer
Credit for work done	1	7
Interesting work	2	3
Fair ~~play~~ pay	3	1
Understanding and appreciation	4	5
Counsel on personal problems	5	8
Promotion on merit	6	4
Good physical working condition	7	6
Job security	8	2

51. On the whole, employers have very good insight into the motivation of their employees.

52. Workers tend to make unreasonable demands.

53. The motive of economic fear is stronger in the worker than the motive of social recognition.

54. Workers tend to favor promotion on merit while employers tend to favor promotion on the basis of seniority.

55. Whenever possible psychologists prefer to make quantitative classifications rather than qualitative classifications. This is generally true because:

1. There is too much overlapping of categories when classes are qualitative.
2. Qualitative information is only descriptive and cannot be used for effective control.
3. Mathematical relationships must be determined before an acceptable theory can be established.
4. More powerful techniques are available for handling quantitative data than qualitative.

For items 56 to 60

Pick out the one item that is not comparable with the other three - not in the same class, the only one relevant (or irrelevant), the only one right (or wrong), etc.

56. 1. Reaction formation.
    2. Displacement.
    3. Projection.
    4. Hostility.

57. 1. Conditioned response.
    2. Motor skill.
    3. Insight.
    4. Maze behavior.

58. 1. A gull 's warning to her chicks.
    2. "Language of the bees."
    3. Courtship pattern of the stickleback.
    4. A dog's begging.

59. 1. Salivation at the sight of food.
    2. Eye-watering with grit in eye.
    3. Sweating in warm room.
    4. Contraction of eye pupils in bright light.

60. 1. Theorizing based on behavior.
    2. Inference from brain anatomy.
    3. Observing one's own consciousness.
    4. Conclusions from brain stimulation.

-978

INTRODUCTORY PSYCHOLOGY CRITERIA TEST

FORM Y

THE UNIVERSITY OF MICHIGAN
DEPARTMENT OF PSYCHOLOGY

and

COMMITTEE ON CRITERIA FOR THE FIRST COURSE
OF THE DIVISION ON TEACHING OF THE AMERICAN
PSYCHOLOGICAL ASSOCIATION

with support from

OFFICE OF EDUCATION, U.S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE
O.E. CONTRACT #SAE-8541

August 1962

1. A group of 185 children from 4 to 15 years of age living in an isolated mountain region was found to have an average I. Q. of 70 on the Stanford Binet test. The correlation between age and I. Q. was negative 75. What inference can reasonably be drawn from this correlation between age and I. Q ?

    1. As children become older, the effects of deprived environment become more pronounced.
    2. As children become older, the effects of heredity become more pronounced.
    3. The correlation is of little value because of the excessive range of ages.
    4. The younger children were less intelligent in relation to their age than the older children.

2. Effect of motives on perception is indicated in the saying

    1. forbidden fruit is sweetest.
    2. a rose by any other name would smell as sweet.
    3. the fairer the paper, the fouler the blot.
    4. unto the pure, all things are pure.
    5. waving a red flag at a bull leads to trouble.

Questions 3, 4, and 5 concern the following:

A psychologist was interested in studying the effects of classroom atmosphere on aggressive behavior in the recess period following the class. There were two recess periods: one following an arithmetic class in the morning, the other following a social science course in the afternoon. All the students took both courses at the specified times. The arithmetic teacher was known as a strict authoritarian, the social science teacher was noted for being very democratic in her classroom procedures. The psychologist rated the students during the morning recess period for agressive behavior. A colleague rated the students for agressive behavior during the afternoon recess period. After a month of ratings, the data were analyzed and it was found that the students showed significantly more aggression after the class with the authoritarian teacher than after the class with the democratic teacher.

Each of the following statements is a criticism or comment about some detail of experimental design. Mark 1 if the statement is true and 2 if the statement is false.

3. The experimenter failed to control for the personality of the students.

4. The experimenter did not take into account teacher personality variables other than authoritarianism.

5. The experimenter failed to control for the effect of the raters' knowledge of the purpose of the experiment on their ratings of agression in the two recesses.

6. "The greater the amount of ambiguity in the perceptual field the greater the chance that the internal, motivational factors will operate in the organization of sensory data."

   This hypothesis would be most relevant to a perceptual experiment comparing the responses:

   1. Of two groups of subjects, each with strong but different motivation responding to structured stimuli.
   2. To two sets of ambigious patterns of stimuli by one group of subjects.
   3. To two sets of highly structured, ambigious patterns of stimuli.
   4. To two sets of stimuli (one ambigious, the other structured) by two groups differing in motivation.

Questions 7 through 10 concern the following:

A psychologist presented an autobiography of an individual to a number of people in various occupations and asked each of them to predict how the individual would respond to certain questions about himself. He found that the clinical psychologists and actors were the most accurate and that the physicist and engineers were the least accurate.

Instructions: For each of the statements below, mark responses as follows:

1. If the statement is supported by the data.
2. If the statement is contradicted by the data.
3. If the statement is a plausible hypothesis on the basis of the data but is neither directly supported nor contradicted.
4. If the statement is irrelevant to the data.

Statements:

7. Clinical psychologists and actors seem to be more skilled at predicting responses of the individual tested than are physicists and engineers.

8. A training in clinical psychology or acting leads to an increased accuracy in the prediction of behavior.

9. Clinical psychologists and actors are more skilled at predicting responses of individuals in general than are physicists and engineers.

10. The more one is interested in people the better one can predict their behavior.

11. When Delbert first glanced at the newspaper page that included a picture of his girl friend, her picture commanded his attention immediately, although the other pictures on the page were larger and in a more prominent position.

This experience may be regarded as an example of:

1. The contrast factor in attention.
2. Internal factors in attention.
3. The primacy factor in attention.
4. Dynamic factors in attention.

For questions 12 and 13 mark the number of the response in the following list which best labels the behavior:

Responses

1. Response generalization.
2. Serial position effect.
3. Competing response.
4. Avoidance conditioning.
5. Stimulus generalization.

Situations

12. "At first, my Johnny would scream bloody murder when I placed him in his bath water, but now, since I started giving him the bottle at the same time, he no longer screams."

13. George has a hard time remembering who lives in the middle apartments which open into a long corridor.

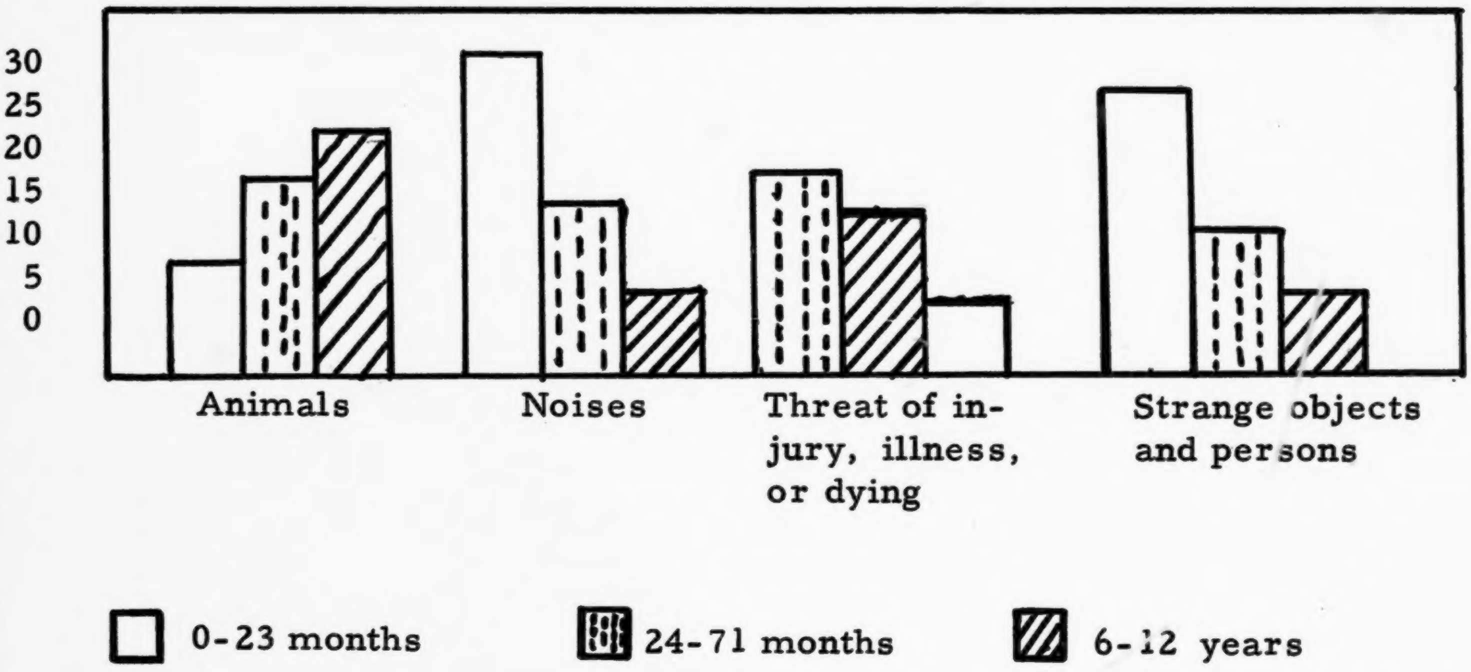
14. You are the leader of a group. John has made a suggestion that seems to you to be a poor one. A non-directive response would be:

    1. "That sounds like a good proposal, John; I wonder if. . . . (suggest any modifications you wish). . . . . "
    2. "I agree with you, John, but I wonder if. . . . . (suggest any modification). . . . "
    3. "That is one proposal we should consider. I have another one to throw into the hopper. . . . . . "
    4. "I think I understand your proposal; you suggest that. . . . . . , is that right?"

Questions 15 through 19 concern the following:

On the basis of the information provided in the chart below, mark your answers in accordance with the following key:

1. True statement; revealed directly in the data.
2. Probably true; can be inferred from trends in the data.
3. No evidence for this conclusion in the data.
4. Probably false; as can be inferred from trends in the data.
5. False; in direct contradiction to the data.



This chart shows the percent of children at various age levels showing certain types of fears.

15. As children grow older (up to 12 years of age) they are more likely to be afraid of animals and less likely to be afraid of loud noises.

16. More children 7 years of age show a fear of strange objects and persons than children of 12.

17. Almost as many infants show fear of strange objects and persons as show fear of noises.

18. A child of 10 will be more likely to be afraid of illness or injury than of dying.

19. More children of 13 are afraid of animals than are afraid of strange persons.

Questions 20, 21, and 22 concern the following:

An experiment was designed to test whether or not bulls are especially sensitive to red. Several pieces of cloth of different colors which a number of observers agreed were of the same brightness were chosen for use. The experimenter wrapped a pole with one piece of cloth at a time and led the bull into an enclosure where the pole was standing. This procedure was repeated several times, with each piece of cloth. The bull showed no consistently different reaction to different cloths. The experimenter said the experiment results indicated that bulls are color-blind.

20. One assumption that the experimenter seems to have made is:

    1. Bulls are especially sensitive to red.
    2. The brightness of different colors for bulls is the same as it is for humans.
    3. Bulls do not react differently to a red cloth.
    4. The brighter the color the more it will attract the bull.

Using the following key, answer questions 21 and 22.

1. Brightness of cloth.
2. Color of the cloth.
3. Bull's reactions.
4. Color-blindness in bulls.

21. The independent variable is:

22. The dependent variable is:

23. If it were true that the IQ's of fraternal twins are as similar as the IQ's of identical twins, this would be an argument opposed to the idea that

1. heredity affects IQ.
2. IQ is affected by experience.
3. IQ is affected more by experience than by heredity.
4. None of these.

Questions 24, 25, and 26 concern the following:

A pediatrician found that the infants of very anxious mothers cried more often than the infants of mothers showing little anxiety. This finding was based on examination of a very large number of cases.

Instructions: For each of the statements following the data indicate:

1. If the statement is supported by the data.
2. If the statement is contradicted by the data.
3. If the statement is a plausible hypothesis on the basis of the data but is neither supported nor contradicted directly.
4. If the statement is irrelevant to the data.

24. The mother's anxiety affects her handling of the child so that he cries more often.

25. The mothers were more anxious because their children cried so much.

26. No general conclusions can be drawn because of the fact that no measure was taken of the anxiety of the infants.

Questions 27 through 30 concern the following:

The problem has been set and the data have been collected. You are first to match each hypothesis in Section A with the experimental outcome in Section B which best supports it. Secondly you are to select the hypothesis and matching experimental outcome which you think best explain the problem and data.

Problem: Is sucking connected exclusively with intake of food in puppies?

Data: Four puppies were taken from a litter of six and put on controlled bottle feeding. For 20 days all conditions except the time devoted to sucking were kept as constant as possible. One pair of puppies sucked from nipples whose holes were small, and was in addition given supplementary opportunity for sucking. The other pair was fed from nipples with large holes. The latter pair showed a tendency to suck all objects possible in between meals, although they had had the same amount of milk per pup as the first pair.

A. Hypotheses

a. Pups have a need to suck independent of obtaining food.
b. Sucking behavior of puppies stimulates their need to suck.
c. Intake of a large quantity of food tends to make puppies sleepy and less restless.

B. Experimental outcomes

1. Puppies allowed to lap up milk at an early age showed more sucking tendencies between meals than puppies fed by their mother.
2. Hungry puppies do more sucking than puppies who have full stomachs.
3. Puppies who are given all their meal at once suck less than those who are given a little portion at a time.
4. Puppies fed on bottles, compared at six months with puppies fed by hand, show more sucking tendencies.
5. Placed on activity platform, which enables an ink chart to be made of the movements of animals, puppies show restlessness up to feeding and then a sudden decline while the food is being digested.

For the next items, 27, 28, and 29 mark the number of the experimental outcome in Section B which best matches each of the following hypotheses, from Section A.

27. a.
28. b.
29. c.

30. The hypothesis and experimental outcome which best explain the given problem and data are in item:

1. 27
2. 28
3. 29

31. Sam is studying in his room in the dorm. A band is playing two blocks away. Sam perceives the band as playing loudly but far away rather than as nearby playing softly. Match this example with the most similar of the following:

1. Sam sees a table as rectangular regardless of his location when looking at it.
2. Sam studies better in a slightly noisy room than in a perfectly quiet room.
3. When Sam looks at people from a tall building they look about the size of ants.
4. Sam is more distractible when he is slightly motivated than when he is highly motivated.

Questions 32, 33, and 34 concern the following:

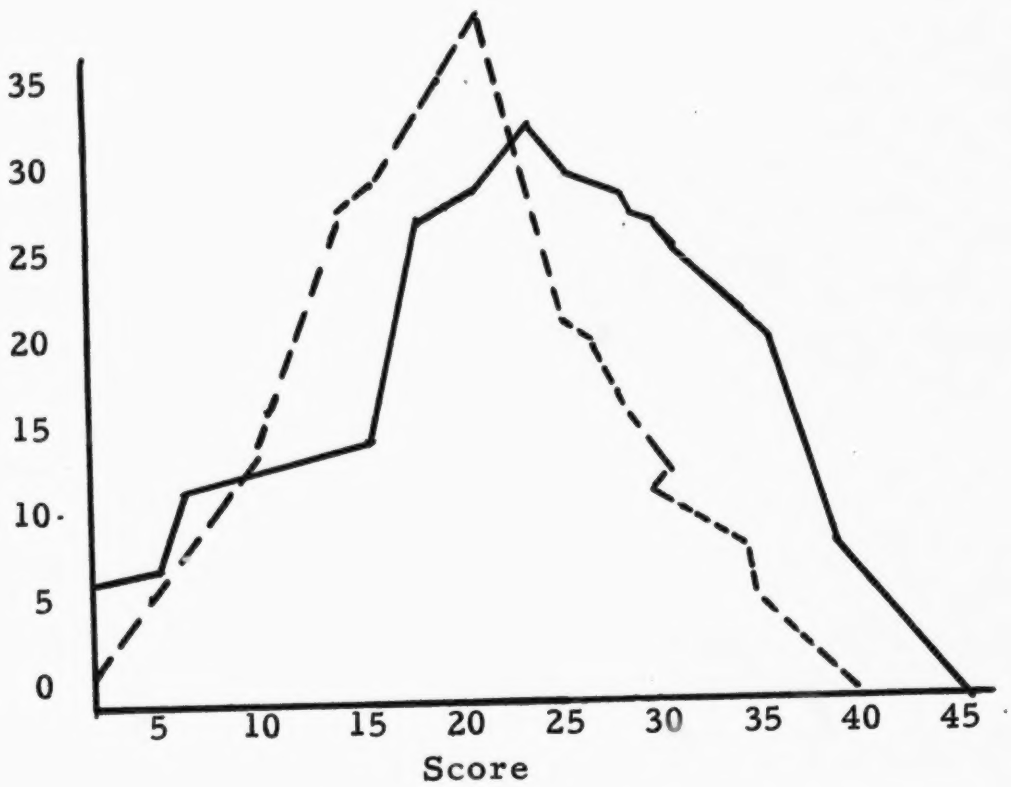


Fig. 1. Distributions of scores of boys (solid line) and girls (broken line) in the ninth grade on a test of arithmetic reasoning.

Indicate:

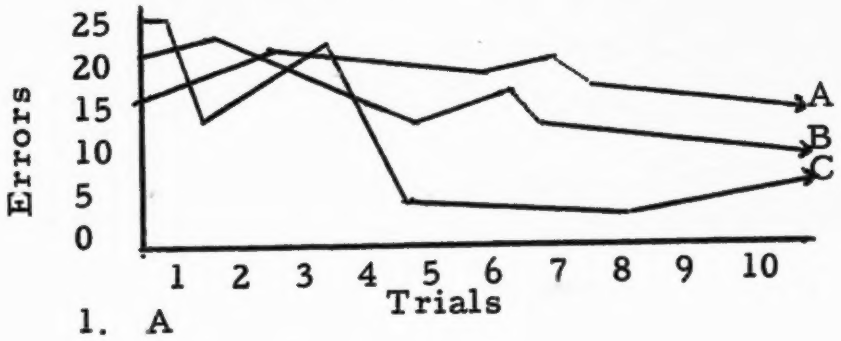
1. True
2. False

32. The boys were more variable on this test than the girls.

33. Average achievement was higher for the boys than for the girls.

34. Both distributions are significantly skewed.

35. Which of the following curves represents learning with insight?



1. A
2. B
3. C

36. Max is one year old. His father is six feet tall and has brown hair. Max calls his father "dada" and also calls all tall men with dark hair "dada." This situation is most similar to:

    1. Your being able to apply psychological principles read in your textbook to a problem in your residence hall.
    2. A rat's consistently turning to the right in a T-maze when he is reinforced only 50% of the time.
    3. Your saying "Hi" sometimes when you see a friend and your lifting your hand in greeting at other times when you see the same friend.
    4. A rat's continuing to jump over a barrier in response to a bright light after being conditioned to a dim light.

37. Which of the following statements could best be supported or discredited by factual evidence?

    1. "The Democratic Party has done more for this country than the Republican Party has."
    2. "Most Americans favor the British position on the Middle East."
    3. "The Secretary of State is not the man for that important post."
    4. "The Republicans generally are reactionary."

Questions 38 through 41 concern the following:

Thirty subjects were matched in pairs on I.Q. scores. One member of each pair chosen at random was given a caffeine pill. The other member of the pair was given a pill which looked like caffeine but was only sugar. Twenty minutes after taking the pills all the subjects were tested for reading speed on a thousand-word passage selected from a novel. Pick the correct answer for each question from the following key:

1. I.Q.
2. Caffeine.
3. Reading speed.
4. Original reading speed.
5. Length of selected passage.

38. The major controlled variable is:

39. The dependent variable is:

40. The independent variable is:

41. A possible uncontrolled variable is:

42. Indicate which one assumption was implicitly made by the investigator in arriving at his conclusion. (In other words, what assumption would one have to make in order to arrive at the conclusion which the author reached?)

A child psychologist found that Negro infants below six months of age do as well as white children on an infant intelligence test. She concluded that this shows that Negroes have the same hereditary potential for intelligence as whites and that subsequent Negro inferiority on I. Q. tests is due to the poor environment in which the Negro is raised.

Assumptions:

1. Negroes should have the same rights and privileges as the whites.
2. There are no differences in the races in respect to intellectual potential.
3. Hereditary factors do not influence the I. Q. as much as environmental factors do.
4. If a Negro were brought up in a decent environment his I. Q. would be the same as the whites'.
5. The tests given at six months correlate highly with what subsequent tests measure.

Questions 43 through 46 concern the following:

Instructions: The problem has been set and the data have been collected. You are first to match each hypothesis in Section A with the experimental outcome in Section B which best supports it. Secondly you are to select the hypothesis and matching experimental outcome which you think best explain the problem and data.

Problem: Are there any general measurable differences in intelligence between legitimate and illegitimate foster children?

Data: A total of 156 adopted children were classified as members of good, average and poor foster homes. The average I. Q. of the children in each grade of home was, respectively, 111, 103, 91. However, when the total group was subdivided into legitimate and illegitimate children, the legitimate children were found to have an average intelligence score of 95, and the illegitimate children an average score of 106. In each of the three grades of homes, a similar difference between legitimate and illegitimate children was obtained.

A. Hypotheses

a. Illegitimate foster children represent a superior hereditary selection in intelligence, compared to legitimate foster children.
b. Intelligence of illegitimate children depends on home environment.
c. Children of lower intelligence are likely to be adopted into poorer homes.

B. Experimental outcomes

1. A positive correlation was found between pre-adoption intelligence tests and socio-economic rating of the adoption homes.
2. A random sample of legitimate foster children showed a higher intelligence score than a random sample of illegitimate foster children, providing home backgrounds for both groups were equated.
3. In the same orphanage, illegitimate children made slightly higher intelligence scores than legitimate children.
4. Analysis of the adoption records of orphanages and state institutions showed that when legitimate and illegitimate children have the same I. Q. and appearance, there is a tendency for the illegitimate child to get a better home.
5. The intelligence of a random sample of illegitimate foster children was correlated positively with the home environment of these children.

For items 43, 44, and 45, mark the number of the experimental outcome that matches each hypothesis.

43. Hypothesis a.
44. Hypothesis b.
45. Hypothesis c.

46. The hypothesis and experimental outcome which best explain the given problem and data are in:

    1. Item Number 43.
    2. Item Number 44.
    3. Item Number 45.

47. Which of the following statements is the most appropriate comment for a psychologist to make about the statement that "practice makes perfect"?

    1. Repetition alone is not sufficient to produce learning.
    2. Repetition of a task will eventually result in a perfect performance if the individual has the necessary aptitudes.
    3. Repetition is the most important factor in learning.
    4. Repetition of a task is a necessary factor in learning a task.

48. An experimenter designed an experiment to determine if musical aptitude is determined by genetic factors. Musical aptitude tests were given to the parents of sixty grade-school children at a PTA meeting. The test was also given to the sixty children. A significant positive correlation was found between the scores of the children and their own parents. The experimenter concluded that musical ability is in part genetically determined.

Which of the following is the most appropriate criticism of the experiment?

1. The conclusion is dubious because the study should have been conducted on more subjects considering the inaccuracy of musical aptitude tests.
2. The conclusion is dubious because the correlation could be attributed to learning.
3. The conclusion is dubious because many of the parents might not have been motivated to perform at their best on the musical aptitude test.
4. The conclusion is unclear because musical aptitude is not operationally defined.
5. None of the above criticisms is legitimate.

49. The fact that some people are maladjusted - and a few seriously so - indicates that the conditioned response and other principles of learning:

    1. Sometimes fail to operate in certain critical or emotional situations for some people.
    2. Sometimes produce unpredictable results.
    3. Are applicable only in controlled situations.
    4. Sometimes operate subject to certain hereditary factors.
    5. Sometimes produce behavior which satisfies immediate needs but whose more remote consequences are unsatisfactory.

50. Below are four diagrams representing designs for studying the effects of an experimental procedure. Which design may be criticised because there is no control for differences in difficulty of the tests?

①

	Before	After
Group I.	Test 1	Test 2
Group II.	Test 1	Test 2

②

	Before	After
Group I.	Test 1	
Group II.		Test 2

③

Before	After
Test 1	Test 2

④

	After
Group I.	Test 2
Group II.	Test 2

51. Instructions: Indicate which one assumption was implicitly made by the investigator in arriving at his conclusions. (In other words, what assumption would one have to make in order to arrive at the conclusion which the author reached?)

An investigator found that a dollar bill was judged to be larger than a piece of cardboard the same size by a large group of subjects. He concluded that the perceived size of an object is influenced by the social value that it has.

Assumptions:

1. A piece of cardboard looks the same as a dollar bill when it is the same size and is seen at a distance.
2. A five-dollar bill would have been seen as even larger.
3. It was the social value and not some other characteristic of the dollar which caused it to be perceived as larger.
4. The more a person values money, the bigger the dollar will appear.
5. Values modify perceptions, but perceptions do not modify values.

In items 52 and 53 match the behavior with the following defense mechanisms:

1. Displacement.
2. Fantasy.
3. Rationalization.
4. Reaction formation.
5. Regression.

52. A very aggressive child grows up to become an active leader in a pacifist movement.

53. A student placed on probation becomes very dependent on a faculty member for guidance and help.

54. Indicate which one assumption was implicitly made by the investigator in arriving at his conclusion. (In other words, what assumption would one have to make in order to arrive at the conclusion which the author reached?)

A psychologist tested a group of delinquent and non-delinquent children with both the Rorschach and the T. A. T. psychological tests. These test protocols were scored for the presence of hostile impulses. The findings were that whereas there was a large and significant difference between the two groups on the Rorschach hostility score in favor of the delinquents, there was no difference between the two groups on the T. A. T. hostility score. The psychologist concluded that the Rorschach test was a more sensitive and valid measure of hostility than the T. A. T.

Assumptions:

1. The Rorschach is as reliable an instrument as the T. A. T.
2. The Rorschach has a greater validity than the T. A. T.
3. The delinquents were matched with the non-delinquents in regard to age, intelligence, and sex.
4. The delinquents were more hostile than the non-delinquents
5. The delinquents had more to conceal than the non-delinquents.

Mark questions 55 through 58 in accordance with the following key:

1. If the problem is capable of empirical solution as stated.
2. If the problem requires some reformulation in order to be tested.
3. If the problem is by its very nature non-empirical and thus incapable of solution on the basis of factual evidence.

55. The day of the month on which a person was born predicts the age at which he (or she) will marry.

56. Is a course in mathematics good for your mind?

57. Is a dog capable of discriminating a minor chord from a major chord on a piano?

58. Are silent men most often deep thinkers?

In items 59 and 60, pick out the one item that is not comparable with the other three - not in the same class, the only one relevant (or irrelevant), the only one right (or wrong). etc.

59.
1. Attitudes.
2. Learning.
3. Experience.
4. Individual differences.

60.
1. Salivating at the odor of food.
2. Startle reflex.
3. Secreting tears with grit in the eye.
4. Contraction of pupil with light in eye.

IV - 3: Personality and Situational Factors in Attitude Change

Krishna Swaminathan

In the past two or three decades social psychology, under the impetus of the classic studies of norm formation by Sherif in 1935 and of conformity behavior by Asch in 1951, has given considerable attention to the research on the formation, persistence and modification of attitude phenomena and the crucial variables determining it. As a result, there arose an impressive accumulation of research findings leading to the emergence of some major theoretical approaches in the study of attitudes and these approaches continue to influence research in the field. They are not theories in the strict sense of the term inasmuch as they are not sufficiently explicit in their psychological assumptions, in their mode of logical inference or in their empirical referents. As Deutsch and Krauss (1965) point out, they are the products of a science which is still in its early infancy and as such are 'ambitiously inclusive and vague in detail.' Their importance, however, lies in the fact that they have stimulated and guided research in the area during the last decade.

A major research concern has been the relationships between attitudes and psychological, or personality, characteristics of the individual. In fact, interest in the study of relationships between attitude and personality dates back to the 1920's and 30's, and the findings of that period were well summarized by Murphy, Murphy and Newcomb in 1937. The studies were mainly correlational in method and their approach to personality was simply analytic and descriptive based on the traditional trait psychology dominant in that period. They lacked a well conceived theoretical basis and their findings were mostly inconclusive. In later research, there was a shift away from this method to one of examining the deeper motivational and cognitive functions that holding or changing of an attitude served. The study of the personal significance of attitudes was guided by a psychodynamic approach which revealed many mediating psychological variables in the attitude process. The last ten years has seen a proliferation of studies on this aspect of attitude literature with the result that the field abounds with a vast number of findings requiring coordination and consolidation into a viable form to be fitted into the existing theoretical frames. In the following pages what is attempted is the development of a conceptual scheme that is both heuristic and meaningful for the study of the relation between attitude and personality and from which the research may be placed in perspective.

The dictum that behavior is a function of one's own personal needs, traits, ability, styles, etc., and characteristics of his social environments such as role expectations social structure, group pressure, etc., is widely well accepted today by researchers in social psychology. While this is recognized as a truism, it has often been neglected in practice in empirical research. Prime influence in determining behavior is usually assigned either to the personal or to the situational factors, often with minimal reference to the other. Although it is true that proponents of extreme views, like personologists and rank behaviorists who insist upon the one to the exclusion of the other factor, are becoming rare in the field, imperialistic tendencies are not uncommon. Personality and social variables are considered as competing explanatory constructs and very often attempts are made directed towards subsuming one under the other.

This tendency in psychology to dichotomize variables into general sets as determining factors entering into behavior is a heritage of the philosophical dualism -- a perennial problem in philosophy from the time of Plato -- which underlay the development of psychology from its beginning. The problem assumed different names in different disciplines at different ages, but the dichotomous thinking persisted. In psychology, this basic dualism is reflected in the controversies centering around such dichotomies as cognition vs. motivation, heredity vs. environment, structure vs. function, personality vs. situation, individual vs. group, etc. The general feature of the controversies is that these analytic categories of psychological data stemming from the pervasive dichotomous thinking are too likely to be treated as though they were separate, independent, fixed and basic. Lewin (1935), starting from the dictum that in science there are no dichotomies, called those concepts class theoretical and characterized the thinking behind them as Aristotelean in his discussion of the unsystematic way in which the basic categories of psychology has been set and maintained historically.

A cursory perusal of the history of psychology reveals repeated attempts to solve this fundamental question. One solution is to deny the dichotomy and the distinction between categories by an approach which Krech (1949) calls 'imperialistic.' In such approaches there is one dominant concept or category and all the other psychological categories are to be understood as its simple reflection and manifestation. This attempts to unify diverse concepts on the basis of what amounts to a dichotomy by a claim of primacy of one basic category over others. Such monistic solutions, however, add very little of permanent value to the science of psychology and at the same time obscure the rich variety of human experience and behavior. Classical psychoanalysis and early behaviorism were the first ventures in psychology towards a solution of this nature.

In the specific problem of the dichotomy between personal and situational determinants in psychology, the imperialistic approach consists in subsuming the one under the other. The personologists and clinical psychologists see persons as the origin of actions. They conceive the individual as a system of events and dispositions. For them, behavior patterns reflect intra-individual structures like needs, traits or cognitions which are enduring and stable, and mechanisms like habit, coping and defensive styles. They are eager to translate all social facts into individual facts. It is not that they deny the reality of situation and its role in eliciting a particular response. They assert that environmental characteristics are secondary. Field-theoretical formulation of behavior as a function of one's lifespace which consists of personality and environment as interdependent factors, in the hands of adherents of this approach, takes on a naive or pure phenomenological meaning and the environment is taken to mean simply the psychological or perceptual environment which is inside the personality, with no reference to actual physical or social environment. This position, if carried to its logical limit, ends up in the philosophical cul de sac of solipsism.

The opposite extreme of this 'imperialistic' approach called situationalism, argues for a psychology without an organism. This is one of the stultifying effects of the influence of modern positivism in psychology, according to which explanatory efforts are to be confined to events that lie outside the organism. In fact, they argue there is no need for a concept of organism once all the properties of the stimulus are understood. By this sort of reductionism, they come up with an oversocialized concept of man. While it is true that adherents of this extreme position are rare in psychology today, the effect of their influence is strong and pervasive in general theorizing. The social behaviorists of the Mead tradition, while making a distinction between the origin and the contemporary function of the concept of the individual, assert that the self is essentially a social structure. It appears to be a law in the development of a discipline that the antidote to a self-defeating position or stand is usually sought in the adoption of an equally impossible opposite position.

A less severe form of this monistic approach, while still opposing the pure phenomenology indicated earlier, stresses the determining role of the situation but does not deny the role of the organism. It pays some slight deference to the concept of personality but claims that organismic characteristics are only secondary in the determination of behavior, for, after all, they develop in interaction with and as a function of a social milieu. The situation is still considered to be the principal source of behavioral variance. The logic of this approach runs as follows: What is prior is fundamental and since the personality system stems primarily from the social involvement the social situation is fundamental in the determination of behavior. If the extreme opposite of this viewpoint is to view human traits as fixed and exclusive properties of the organism, irrespective of the environment, this approach insists that there are no personal traits, but only traits of the situation. An individual is nothing more than a bundle of tendencies-in-situation. From this point of view then, it is asserted that personality tests taken in the classroom or clinic fail completely to predict behavior in other situations. This emphasis on the excessive determination by situational factors is not uncommon in research studies. Smelser & Smelser (1963) report many studies in which the social system is the source of independent variables and personality variables are dependent. Of course, no single study has been thought to demonstrate the primacy of social over the individual factors, but selective and continued exposure to a set of studies congruent with this position has seemed to throw the weight of evidence on that side.

Further, the stance of the sociologically inclined social psychologists regarding the primacy of the social over the individual appears to receive additional support from the very peculiar property of the two levels of data. In many cases personal and social variables are highly correlated. Personality structures develop, at least partially, in response to the social environmental matrix. Situational variables like social structure, group affiliation, roles, norms, etc., are found to integrate many of an individual's needs and traits. Consequently, the specification of a situational variable carries in it an implication of corresponding psychological attributes. The result is that there may be little practical difference between psychological and sociological prediction of behavior. Empirically, the two frames of reference articulate. It might seem then, that data at one level are adequate for explanatory purposes.

These different forms of monistic approach remain, however, a kind of patchwork, resulting from the attempt to incorporate one set of concepts into another. The attempts to explain behavior by reference to one kind of variables only are frequently overtaxed in the attempt to provide a unitary solution to the nagging dichotomy in psychology. Relying on logic and selective evidence, one can make a good case for either extreme, but the tendency to spread out central concepts of a particular level of inquiry to cover the full range of human activity is a simple instance of the fallacy of misplaced concreteness, against the danger of which Whitehead (1938) sufficiently warned the scientists.

An alternative approach is one which recognizes the dichotomy but does not consider the categories as mutually exclusive. The boundaries are not sharp, rigid and fixed. Krech (1949) called this approach 'parliamentary and individual sovereignty,' requiring a mutual regard for and recognition of the independence of concepts or categories and an admission of the influence of one over the other. It is not reductionism, but interactionism. Its virtue is that it admits data which are closer to real life. It is comprehensive and pluralistic in orientation but lacks integration. The concept of interaction with which this approach tries to relate the disparate categories is unsuccessful because it offers no suggestion of what this interaction is or of how it comes about. The concept does not really solve the problem of the dichotomy but rather multiplies it; for if one maintains the traditional separation of processes he faces not only the difficulties of personality concept alone or of social situation concept alone but the problems of one multiplied by the problems of the other. As Hochberg and Gleitman (1949), in the context of the controversy regarding the dichotomy of perception and motivation, point out, 'so long as they are couched in different dimensions, the dualism which had postulated the pineal gland as the point of interaction between soul and body is, at best, but lightly concealed.' (P. 180)

The two approaches described above are thus far from adequate to overcome the difficulties of the dichotomy. While monistic approaches are found to err in narrowly conceiving the rich and wide variety of human behavior, the pluralistic approach errs in the opposite direction of conceiving behavior too extravagantly, with no effort to be parsimonious. Either approach can only lead to a science of rigid minds and flexible concepts, whereas psychology needs to be a science of flexible minds and rigid concepts.

There is clearly a third choice which requires a revolutionary perspective calling for a fresh examination of the dichotomous categories of psychological data. Science stagnates when the movement of thought remains trapped by an outmoded language. Progress in psychology is more likely to be achieved by bold attempts to overcome the crippling effect of the old dichotomy by rising to a higher level of synthesis through a new unit of analysis. Lewin's field-theory could be characterized as the first attempt toward such a solution which avoided the dangers of reductionism, the fallacy of misplaced concreteness and the sterility of eclecticism. The field perspective is not a simple combination or addition of different approaches. "The point is not simply that one sees better with two eyes used simultaneously than with one -- indeed, one may not see much better -- but he sees differently; a new dimension is added. In mathematical terms, the combined results of two or more influences are a product, not a sum of their interaction." (Yinger, 1965, p. 7) The empirical support for the above observation can be seen in a study by Hunt (1965) who found that neither subjects nor situations contributed more than 5% of the total behavioral variance but that the bulk of the variance came from the interactive sources. Field-theory is the most parsimonious and at the same time the most meaningful way of organizing much of what is known about behavior.

Field perspective as a revolutionary approach calls for explorations on both the levels, not additively but interactively and it achieves this by posing questions in a different way. As Anastasi (1958) pointed out in connection with the dichotomy of heredity vs. environment, the traditional questions about heredity and evnironment are intrinsically unanswerable. The question: Which is responsible for individual differences, heredity or environment? is a meaningless one. So is the question: Which is more important for behavior, the individual personality or the situation? Neither component can be uncoupled from the other. The proportional contribution of heredity to the variance of a personal trait rather than being constant, will vary under different environmental conditions. Similarly, under different heredity conditions the relative contribution of environment will differ. Hereditary influences as well as environmental factors vary along a continuum of indirectness. So, too, there are some situations where the potential range of individual variation is highly restricted and others where individual variations are maximized. A similar differentiation with regard to personality factors could be made. According to the field perspective the proper form of questioning is: How do the situational structures, interacting with individuals with various tendencies, affect behavior?

The Lewinian term 'life-space' provides the new unit of analysis which is at once both psychological and sociological. It offers a perspective which permits analytic distinctions between individual and situation and at the same time emphasizes their functional relation and mutual determination. Long established ways of looking at things, aided and abetted by the prevailing language patterns and guided by entrenched philosophical beliefs, may prevent clear understanding of the analytic separation of the two levels of variables on the one hand and their empirical interaction and reciprocal determination on the other. Yinger (1965) compares the difficulty involved in developing a perception of this kind to the efforts required to overcome the perceptual problem in viewing at once the figure and ground of a reversible figure; "Field theory can be thought of as an attempt to surmount conceptual equivalents of the perceptual problem to make it possible to apprehend psychological and sociological facts simultaneously." (P. 39)

What does it mean to say that personal and situational factors should be considered simultaneously? We said that 'field' as a new unit of analysis incorporated into it both personal and situational forces. This is often interpreted as an assertion that proximal factors like personality and the conception or perception of the situation are the genuine psychological variables and that the distal factors of physical and social facts are non-psychological and hence non-functional; they affect behavior only indirectly after their transformation into psychological facts by perception. Couch (1962) emphasizes this point when he says: "These external influences become internal tensions by the processes of perception, and thus attain the same status as psychological determinants as needs and defenses.. These forces are best termed "press" -- following Murray's well known scheme." He goes on to divide "press" forces into two parts, calling the first the Apperceived Press which refers to the individual's interpretation of the social environment around him and the second, the Behavioral Press which refers to the overt behavioral acts directed at him. The latter, however, is not conceived after the fashion of Murray's concept of Alpha press, which consists of elements in the objective environment as seen or inferred by the trained observer and not by the subject himself. Couch insists 'that this directed behavior can have an effect on behavioral action only after its perceptual interpretation by the acting individual to whom it was directed' (p. 119). Allport also seems to imply the same thing by the assertion that 'the personality is itself a factor in the so-called situation' (1961, p. 180). Thus, it is said the situational factors, while significant in their operation are, however, operative only within the limits of the potential provided by the personality itself. The objective social and physical environment serves only as a limiting condition.

A more consistent and a thoroughgoing field formulation, on the other hand, requires that neither personality variables nor environmental variables by themselves can have direct effects upon behavior except through the mediation of the other. In the words of Yinger (1965), "Priority in determining behavior can be assigned neither to the sensitivities of the person nor to the facilitating forces in the environment, because both are always involved in the equation." In other words, if the non-psychological milieu cannot have direct effect upon behavior then the psychological environment cannot have direct effects on behavior either. If there is no personality apart from situation it is equally true that there is no situation apart from personality. It is well to remember the position of Sanford (1963) in this connection: "Theorists may differ in the importance that they attach to this environment [geographical], but none can justify its complete neglect....But he [psychologist] must recognize that, if he is to study relationships involving the "real" [geographical] environment, he must specify its stimuli without benefit of a subject's perception of it." (p. 556)

What are the implications of this perspective to the analytic concepts of personality and situation? Personality conceived in terms of 'traits' has certain connotations inimical to this perspective. Traits have traditionally meant one's typical behaviors which are assumed to be based in innate factors, such as instincts. As Klein, et al. (1967) observe, the term trait has been conceived in two different ways in the literature; one regards it as a fixed, inner process which causes behavior and the other views it as a disposition or 'tendency that is brought into play in a given class of situations, acting as a limiting condition upon responses in a range of situations.' The former view is the one which we referred to as inimical to the field perspective, because any view that focuses on internal forces operating independently of the situational context seems inadequate. The view of traits as dispositions or directional potentialities or as readiness to act, as autonomous aspects of personality which at the same time are locked into situational conditions is, however, consonant with the field approach.

Personality is best viewed as a system of tendencies with 'multiple possibilities' (to borrow the term from Yinger), only some of which a given situation will elicit. A person has many diverse tendencies to act, some weak and others strong, which vary along dimensions of stability, pervasiveness, consistency and patterning (Krech, et al., 1962). Which one will issue in action depends upon the facilities and the constraints of the environment. A tendency, though salient, may be expressed less often simply because of the balance of barriers and facilities in the situation. The principle of multiple possibility accounts for the observed flexibility of the individual which is essential to the maintenance and development of personality as a system.

The principle applies equally well to situations. All environments have multiple possibilities in terms of their implications for behavior; the situation may vary, for instance, in its range of requiredness or permissiveness for behavior. Which situation will activate a response depends upon who, with what tendencies, experiences it. With the individual thus viewed as a system functioning within a sociocultural situation having system-maintaining processes that set limits on the action possible within it, the research task becomes one of specifying the conditions of their interaction. Eventually an adequate taxonomy of person-cum-setting configurations should emerge.

There are situations in which all forces but one can be regarded as constant or one factor is of such major importance that it dominates the outcome. For example, in conformity studies the demands of unanimous group pressure are seen so overwhelming that almost everyone complies according to prediction, irrespective of individual differences in tendencies. Successful and accurate prediction may be possible either because other forces were constant or because the relevant tendencies of the subjects involved varied over a narrow part of the imaginable range. In neither case can it be said that the influence of other forces (personality dispositions) is absent. Similarly, when situational demands are ambiguous, uncertain and vague, compliance could depend almost entirely upon personality variables. Here again it cannot be said that just because the situational forces were ineffectual they were uninvolved. To say that one force dominates, in the sense that its variation accounts for the range of outcomes, is not to say that it determines the outcome. As pointed out earlier, either set of variables -- personality or situational -- seems sufficient in such extreme cases for accurate prediction. But more than prediction is required if we are to understand behavior in its full natural form, where the influence of other forces is always at work. An adequate conceptual framework must explain results equally well when the setting is non-extreme and normal.

Field perspective provides such a framework; it emphasizes that the relationship between personality and situation is reciprocal and mutually determinant (that is, both the situation and the individual are "unknowns" that can be defined only when the other is also defined), that an a priori assumption regarding the direction of influence is unwarranted, and that the research task should consist of applying the principle of multiple possibilities simultaneously to personality factors and situational influences. Such a social-psychological approach thus requires viewing situations as well as individuals as having structures and selector systems in the form of norms and sanctions and the desires and values of significant others which furnish their definition and meaning for the individual.

In the context of the studies of social influence (which, for the purpose of present review, are not distinguished from the studies of persuasion and conformity), the importance of this approach is all the greater in view of the tendencies of a number of investigators to search for a trait of persuasibility (Hovland and Janis, 1959; Chu, 1966; Hyman and Stephans, 1965) and a trait of conformity (Blake, Helson and Mouton, 1957; Crutchfield, 1955; Hoffman, 1953, 1957; Vaughan, 1964). Hovland and Janis report three important experimental studies, the findings of which lead them to conclude that there is evidence of the existence of a general "unbound" persuasibility factor in personality. They admit that the findings are far from conclusive because variation in communication stimuli in content and communicator characteristics was restricted and there was also little variation in media and situational surroundings. The classroom setting for the experiments might have facilitated perception of the communication as coming from a prestigeful source, and in fact a very limited range of sources was used. Even content variation of communications was limited to topic variation for the most part, and very little variation in appeals, arguments and styles appeared. In view of these limitations one doubts that the results could be validly generalized extensively to other situations, media, etc.

Further, within the classroom setting the possibility of different factors of personality getting engaged was not given serious attention. Factors like the need for approval, achievement via conformity, and affiliation motive are generally found to be very important in the classroom setting. To say that the response of subjects is similar and hence attributable to a trait of general persuasibility appears to be a gross over-simplification of a rich complex phenomenon. It would have been psychologically more meaningful had the persuasibility responses been differentiated in terms of underlying functions of personality. In the Abelson and Lesser study (Hovland and Janis, 1959, chap. 7) children in a first grade classroom manifested their disposition to identify with a broad class of influencing agents. Will they do so in an influence situation having a different structure? It might be said that this question did not arise in this study, as the authors appear to be interested in tapping conformity in a "pure" situation which does not require either agreement or resistance. The authors in fact stated that they preferred to deal with pure persuasibility rather than conformity on the grounds that the latter combines pure susceptibility with the motive to be right. However, did they actually design a study of pure persuasibility in pure situations? The experimenter is part of the experiment, and a subject's beliefs about him introduce more or less irrelevant variability which cannot be excluded.

The authors themselves point out that the generality of persuasibility for different communicators obtained for 6- and 7-year-old boys was not found in 11- and 13-year-old groups. This observation suggests that the range of situations in which the tendency to be susceptible manifests itself may depend upon the subject population. The fact that some of the hypotheses in the monograph were borne out may be because conditions of variation in sample, source, medium and content of message occurred over a small range.

Assuming the construct of an 'unbound' trait of persuasibility, the authors of the monograph search for its determinants and personality correlates, so that perhaps a "persuasible type" of person could be identified. Two of the contributors used nine personality self-rating measures and found "persuasibility" positively correlated with them in a situation of mass-media communication, though the magnitude of correlations was consistently low, the largest being only .27 and even those that are statistically significant can account for only a small percentage of variance. However, Chu (1966) in his replication of this study in Taipei, found some significant positive correlations, the highest being .54. He attributes his larger correlations to the cultural peculiarity of Chinese society which places a high premium on authoritarian submission in contrast to that of American culture which stress the virtue of self-reliance. Even though low correlations by themselves do not necessarily imply a low degree of relationship, as they may reflect low reliability or low validity of the measuring instruments employed, the very approach to find a general personality profile of a "persuasible type" is questionable. As Kelman (1966) points out, "the motivations that underlie the acceptance of social influence are numerous and varied, and the forces that impel an individual to change his attitudes or actions in response to social influence are likely to differ from situation to situation." (p. 6)

In a similar search for a trait of conformity, Hoffman (1953) originally hypothesized a need to conform, which he inferred from subjects of his study who yielded to a group norm in the absence of any situational demand. Using a perceptual-judgmental task, he divided the subjects into high and low conformity criterion groups who were then tested on a few personality measures. He identified high yielders as high on parental dominance and intropunitive handling of hostility, low on ego-strength. In a later study (1957) he reported evidence for a need to resist group influence coexisting with a need to conform. He showed how this seeming contradiction could be resolved in the developmental theory of compulsive conformity. Though he did not look for consistency in conformity over many situations for the validation of a "trait of conformity," he did show some construct validity of the notion of a disposition to conform. This validation by Hoffman was followed by studies of others who sought to show that the construct has considerable generality with respect to different situations. Crutchfield (1955) found consistent individual differences in conformity in his sample of fifty military officers tested on stimulus materials varying from perceptual to attitudinal items, from structured to ambiguous, and from impersonal to personal.

Blake, Helson and Mouton (1957) employed three types of materials or tasks: counting metronome clicks, solving arithmetic problems and judging attitude statements. He found a fairly consistent tendency to conform to simulated group responses for all three tasks. Subjects were relatively less prone to conform when presented with perceptual and ability tasks than they were when presented with attitude items, probably because the latter are much more ambiguous, open to argument and disagreement than matters of fact which are more easily tested and less likely to remain ambiguous. They also found evidence of some generality of the disposition to conform, both within a set of tasks of the same kind and between different kinds of tasks.

A more recent attempt to find trans-situational generality of conformity was made by Vaughan (1964) who manipulated four discrete situations in which he obtained four different measures of conformity. The product-moment correlation between these measures revealed a low but significant relationship thereby hinting at, rather than demonstrating, consistency in conformity. Since he found on inspection of the data that the measures were not linearly related, the Pearson r evidently failed to unearth the trans-situational consistency most effectively. The distribution of scores of conformity for this situation showed little relationship in the middle range but with an increase in linearity at the extremeties. Vaughan therefore selected criterion groups of high and low conformity from the ends of the distribution for tests of personality discrimination. He then found that all the measures of personality discriminated significantly between the high and low groups. He was aware that the discard of the middle range of the distribution does not merely reduce the quantity of the information (he had to be content with N as small as 6 for each group) but might also alter the nature of data and pointed to the danger of testing a hypothesis by the use of extreme groups when an assumption of linear relationship is not strongly tenable. He contended, however, that the absence of a linear or curvilinear relationship does not preclude the possibility that the extreme groups can be discriminated.

Breger (1963) has viewed conformity to group pressure as a defense against the expression of hostility in line with the psychoanalytically based dynamics of conformity. He used a modified Asch-type situation and two indices of hostility, one from a projective method, the other from actual behavior. He found, as predicted, that conformity tends to be positively related to covert or defended hostility and negatively to directly expressed hostility. Stronger evidence was obtained in the arousal-expression situation where the groups were categorized into "strongly expressive," "insightful," "strongly repressive" and "doubtful." It was the strongly repressive group that showed a significantly high mean conformity score. In a later study, Breger and Ruis (1966) introduced attitude items to measure conformity under three different experimental treatments. After initial exposure to the attitude items, subjects were grouped and each group exposed to different treatments. Subsequently conformity measures using a modified Crutchfield (1955) apparatus procedure was obtained for all the subjects. Subjects exposed to the treatment of a strong anti-conformity appeal conformed significantly more than subjects in the "understanding"or the control conditions. The experimental treatments all failed to produce any decrease in conformity for the obvious reason that it was defense-based. Studies by Katz, Sarnoff, and McClintock (1956) and Katz, McClintock, and Sarnoff (1957) provide ample empirical support antecedent to the above findings. The relatively increased number of yielding responses under the anticonformity appeal condition is explained post hoc by the author as due to the increased feeling of threat and anxiety aroused by such an appeal in subjects who were potentially conforming. The threat and anxiety led to an increase in overall defensiveness, leading to increased conformity.

All the studies considered above either directly or indirectly argue for the existence of a stable and enduring trait or disposition of conformity similar to the trait of persuasibility studied by the Yale group of researchers. Several of the investigators attempted to speculate on the psychological basis of such a disposition. Although there was no claim on the part of any one of them for conclusive findings in support of a stable disposition to conform, the faith in it seems to persist. The correlations of conformity behavior across situations were generally low and/or insignificant. Further, there is an overriding question as to the soundness of the use of extreme groups to test the presence of a relationship. Some experimenters seem to have resorted to this type of testing for reasons both theoretical and empirical: the empirical reason being that the linear correlation used by every investigator failed to reveal in a clear-cut fashion the sought-after consistency. Theoretically, the presumption is that there are a few individuals who are generally and usually responsive to influence and a few others who are impervious or resistant on all occasions. Because the number of such cases that might be observed in a population is probably small it is not surprising that a linear measure over the entire range failed to reveal their nature.

The crucial evidence for a trait of conformity can be obtained only by comparing individuals for their conforming behavior in many different kinds of situations. Neither a single measure (Hoffman, 1953) nor a single experimental situation (Crutchfield, 1955) can be taken as proof of the existence of the trait. Many studies failed to set up real differences in situations and those that did use qualitatively different situations failed to show consistency. On the other hand, evidence to the contrary, that situations hold the key to conformity, is abundant. The critical study by Goldberg (1954) found susceptibility to influence to be highly specific. He was unable to find anything but low intercorrelations between conformity and different experimental conditions and was unable to observe any general personality characteristics of conformity. It may be, as the adherents of trait theory of conformity could point out, that his difficulty lay in an inappropriate measure of conformity both with respect to the subject matter and the operational criterion. But it cannot be gainsaid that any number of studies in the area show the importance of situational determinants of conformity. Studies abound showing that differences in the nature of task, differences in the characteristics of groups and person-group relationships and differences in the conditions of responding all produce differences in conformity behavior.

The situation in social influence studies is further complicated by the use of a gross concept such as conformity or attitude change without differentiating the concept meaningfully. Changes resulting from social influence may be considered from different levels or depths. Jahoda (1959) while stressing the need to make such distinctions, divided conformity response into "public" and "private." The literature of empirical studies also demonstrates the existence of discrepancies between public and private attitudes. It has been realized in recent years that in order to establish a clear relationship between personality and situational factors in attitude change research, explicit consideration of the nature of response, whether private or public, expedient or converted, conventional or acquiescent, etc., should be in the conceptual framework. Many investigators (Burdick, 1955; Dittes and Kelley, 1956; Kelman, 1953; Kelley and Volkart, 1952; Raven and French, 1958) have pointed out that the separation of response change into private and public categories is essential because they denote different processes having different underlying personality dispositions. In a recent study Steiner and Vannoy (1966) found that personality scores on manifest anxiety, aggression and category width significantly discriminated between subjects who "yielded" and those who became "converted."

In short, in studies on the role of personality variables on attitude change the search should not be towards finding a trait of persuasibility or conformity and its personality determinants and correlates but should focus on identifying personality characteristics that predispose individuals to display a particular type of reaction, given a particular situation. The research task under this conceptual framework then becomes one of categorizing types of influence situations and types of response to influence, in terms of which propositions regarding the role of personality variables can be developed.

There have been in the recent past several attempts to develop a taxonomy of influence situations as preliminary efforts toward the research task mentioned above. Katz and Stotland (1959) differentiated three types of influence in terms of the functional bases of attitudes as proximal, object-instrumental and ego-instrumental. Katz (1960) later modified this typology by amalgamating the functional bases and motivational components and delineated four types: instrumental, ego-defensive, value expressive and knowledge. These four different functions are substantially congruent with the analytic sheme of Smith, Bruner and White (1956) who differentiated three functions: object appraisal, social adjustment and externalization. There is a great deal of overlap between these functions, as Janis and Smith (1965) observe: "Katz appears to have made his classification in terms of the respective traditions ofpsychological theory that seem most relevant whereas Smith, Bruner, and White have been most concerned with differential ways in which informational in-put is relevant to the attitude." (p. 205). Another fruitful differentiation of motivational bases underlying conformity behavior is that proposed by Deutsch and Gerard (1955) in distinguishing normative and informational forms of social influence, the two bases of social influence that the pioneering studies of Asch (1952) and of Sherif (1948) represented. The study by Asch illustrates normative influenced in that subjects were influeced to conform to the positive expectation of others before unambiguous stimuli; Sherif's study is an instance of informational influence in that subjects were motivated to be accurate. A similar distinction of influence situation was made by Jackson and Saltzstein (1956) in the form of the forces towards social reality and the forces towards group locomotion. Thibaut and Strickland's (1956) discussion of 'group set' and 'task set' situations, McDavid's (1959) 'message-oriented' and 'source-oriented' situational distinctions, are instances of further attempts towards developing an adequate classification of influence situations.

Finally, Kelman (1961) proposed three types of social influence situations in terms of the different psychological processes representing three different motivation patterns -- compliance, identification and internalization. Kelman was led to his formulation because he was dissatisfied with the distinction between public conformity and private acceptance. He held that private acceptance itself requires further differentiation corresponding to the two different processes of influence-identification and internalization, based on his insightful psychological analysis of the "true believer" and "brainwashing" phenomena. Private acceptance is distinguished on the basis of its dependence on and independence from external support. The need for such a distinction was recognized by Jahoda (1959) when she suggested that the public and private nature of response along with the degree of individual's investment in the issue, should be taken into consideration for conceptualizing various types of attitude change.

These are some of the crucial distinctions that investigators in the area of attitude change have advocated and which constitute the essential conditions for discovering meaningful propositions regarding the role of personality variables in attitude change. The function of a conceptual scheme is to call attention to different kinds of factors or variables that should be taken into account. The framework that is described and developed above for the study of personality factors in attitude change emphasizes:

1) That the personality variables cannot be considered independent of situational factors inasmuch as, from the field perspective, one cannot be defined without the other;

2) That personality needs to be conceived as an open system of diverse tendencies with multiple possibilities instead of as a repository of certain traits regardless of situational diversity;

3) That the search for a generality of conformity or persuasibility as a trait irrespective of different influence settings is sterile because it obscures the rich variety of functional moorings of conformity behavior; and

4) That a model for the study of personality factors in attitude changes should take into account simultaneously both response and situational variables.

[redacted]

References

1. Allport, G. W. Pattern and Growth in Personality. New York: Holt, Rinehart, and Winston, 1961.

2. Anastasi, A. Heredity, environment, and the question "How?" Psychol. Rev., 1958, 65, 197-209.

**

3. Blake, R. R., Nelson, H., and Mouton. The generality of conformity behavior as a function of factual anchorage, difficulty of task, and amount of social pressure. J. Pers., 1957, 25, 294-305.

4. Breger, L. Conformity as a function of the ability to express hostility. J. Pers., 1963, 31, 247-257.

5. Breger, L. and Ruiz, C. The role of ego-defense in conformity. J. Soc. Psychol., 1966, 69, 73-85.

6. Burdick, H. A. The relationship of attraction, need achievement and certainty to conformity under conditions of a simulated group atmosphere. Unpublished doctoral dissertation, University of Michigan, 1955.

7. Chu, G. C. Culture, personality and persuasibility. Sociometry, 1966, 29, 169-174.

8. Couch, A. S. The psychological determinants of interpersonal behavior. In Personality Research, S. Coppersmith (ed.). Copenhagen: Munksgaard, 1962.

9. Crutchfield, R. S. Conformity and character. Amer. Psychologist, 1955, 10, 191-198.

10. Deutsch, M. and Gerard, H. B. A study of normative and informational social influences upon individual judgment. J. Abnorm. Soc. Psychol., 1955, 51, 629-636.

11. __________, and Krauss, R. M. Theories in Social Psychology. New York: Basic Books, 1964.

12. Dittes, J. E. and Kelley, H. H. Effects of different conditions of acceptance upon conformity to group norms. J. Abnorm. Soc. Psychol., 1956, 53, 100-107.

13. Goldberg, S. C. Three situational determinants of conformity to social norms. J. Abnorm. Soc. Psychol., 1954, 49, 325-329.

14. Hochberg, J. E. and Gleitman, H. Towards a reformulation of the perception-motivation dichotomy. In Perception and Personality, J. S. Bruner and D. Krech (eds.). North Carolina: Duke University Press, 1950.

15. Hoffman, M. L. Some psychodynamic factors in compulsive conformity. J. Abnorm. Soc. Psychol., 1953, 48, 383-393.

** 2a. Asch, S. E. Social Psychology. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1952.

16. Hoffman, M. L. Conformity as a defense-mechanism and a form of resistance to genuine group influence. J. Pers., 1957, 25, 412-424.

17. Hovland, C. I. and Janis, I. L. Personality and Persuasibility. New Haven: Yale University Press, 1959.

18. Hunt, J. McV. Traditional personality theory in the light of recent evidence. American Scientist, 1965, 53, 80-96.

19. Hyman, B. and Stephens, M. L., Jr. Differences in general persuasibility to peer group pressure between catholic high school and public high school students. J. Soc. Psychol., 1965, 66, 73-78.

20. Jackson, J. M. and Saltzstein, H. D. The effect of person, group relationships on conformity pressures. J. Abnorm. Soc. Psychol., 1958, 57, 17-24.

21. Jahoda, M. Conformity and independence: a psychological analysis. Human Relations, 1959, 12, 99-120.

22. Janis, I. L. and Smith, M. B. Effects of education and persuasion on national and international images. In International Behavior: A Social-psychological Analysis. H. C. Kelman (ed.) New York: Holt, Rinehart and Winston, 1965.

23. Katz, D. The functional approach to the study of attitudes. Publ. Opinion Quart., 1960, 24, 163-204.

24. ________, McClintock, C. G., and Sarnoff, I. Measurement of ego-defense related to attitude change. J. Pers., 1957, 25, 465-474.

25. ________, Sarnoff, I., and McClintock, C. G. Ego defense and attitude change. Hum. Relat., 1956, 9, 27-46.

26. ________ and Stotland, E. A preliminary statement to a theory of attitude structure and change. In Psychology: A Study of a Science. Vol. III, S. Koch (ed.). New York: McGraw-Hill, 1959.

27. Kelley, H. H. and Volkart, E. H. The resistance to change of group anchored attitudes. American Sociological Rev., 1952, 17, 453-465.

28. Kelman, H. C. Attitude change as a function of response restriction. Hum. Relations, 1953, 6, 185-214.

29. ___________. Processes of opinion change. Publ. Opinion Quart., 1961, 25, 57-78.

30. ___________ and Cohler, J. Personality factors in reaction to Persuasion. Mimeographed, 1966.

31. Klein, G. S., Barr, H. L. and Wolikzky, D. L. Personality. Ann. Rev. Psychol., 1967, 18, 467-560.

32. Krech, D. Notes toward a psychological theory. J. Person., 1949, 18, 66-87.

33. ________, Crutchfield, R. S. and Ballachey, E. L. Individual in Society. New York: McGraw-Hill, 1962.

34. Lewin, K. A Dynamic Theory of Personality. New York: McGraw-Hill, 1935.

35. McDavid, J. W. Personality and situational determinants of conformity. J. Abnorm. Soc. Psychol., 1959, 58, 241-246.

36. Murphy, G., Murphy, L. B. and Newcomb, T. M. Experimental Social Psychology. New York: Harper & Row, 1937.

37. Raven, B. H. and French, J. R. P., Jr. Legitimate power, coercive power, and observability in social influence. Sociometry, 1958, 21, 83-97.

38. Sanford, Nevitt. Personality: its place in psychology. In Psychology: A Study of a Science, Vol. 5. S. Koch (ed.) New York: McGraw-Hill, 1963.

**

39. Smelser, N. J. and Smelser, W. T. Personality and Social Systems. New York: John Wiley, 1963.

40. Smith, M. B., Bruner, J. S., and White, R. W. Opinions and Personality. New York: John Wiley, 1956.

41. Steiner, I. D. and Vannoy, J. S. Personality correlates of two types of conformity. J. Pers. Soc. Psychol., 1966, 4, 307-314.

42. Thibaut, J. W. and Strickland, B. R. Psychological set and social conformity. J. Pers., 1956, 25, 115-129.

43. Vaughan, G. M. The trans-situational aspect of conforming behavior. J. Pers., 1964, 32, 335-354.

44. Whitehead, A. N. Modes of Thought. New York: Macmillan, 1938.

45. Yinger, M. Toward a Field Theory of Behavior. New York: McGraw-Hill, 1965.

** 38a. Sherif, M. An Outline of Social Psychology. New York: Harper & Row, 1948.

IV - 4: The Relationship Between Student-Teacher Compatibility of Cognitive Structure and Student Performance

Yi-Guang Lin and Wilbert J. McKeachie

Runkel (1956 a, 1956 b) has shown that communication is facilitated by the compatibility of cognitive structure between the communicating individuals. He hypothesized that more effective communication between teachers and students would allow greater learning to take place. Runkel found that those students whose cognitive structure was collinear (compatible)[1] with their instructors had significantly higher performance levels (that is) course grades) than those students not collinear with their instructors. We have attempted to replicate and extend Runkel's work.

The present report describes two studies using two different sets of stimuli and two different methods of constructing individual's I[2] scales.

The First Study

Method

Subjects

The subjects in this study were 110 students enrolled in four sections of an introductory psychology course in the winter semester of 1964 at the University of Michigan. Each section was taught by a teaching fellow.

Procedure

A set of 10 items was used as a stimulus domain to represent psychological knowledge and viewpoints (Appendix A). In the middle of the semester, each student was asked to rank order these 10 statements according to how agreeable these statements were to him. Each instructor also rank ordered these statements. Each rank order represents an I (Individual) scale. The compatibility of cognitive structure is indicated when the two I scales can be unfolded into or generated by a same qualitative J (Joint) scale (Coombs, 1964). The index of compatibility for each student (a yes or no dichotomy) was constructed depending on the compatibility of each student's I scale with his own instructor's I scale.

---

[1] Runkel uses the term collinear while Coombs uses compatible. These two terms are used synonymously in the present paper.

[2] An I scale is simply an individual's ordering of a set of stimuli.

Only two noncollinearity tables, one for five stimuli, and one for six stimuli, were available when the analysis of data began. Therefore we had to decide which subset of statements would be used to constitute the stimuli for the scale. (A noncollinearity table for seven stimuli was constructed later following Runkel's suggestion*). Factor analysis, and nonmetric factor analysis (Lingoes and Guttman, 1967) of the 10 item rank order data were performed. The purpose of these analysis was to find some guide for grouping the statements; that is some way to select those 5, 6, or 7 statements to constitute scales which would represent the domain of 10 items. Those statements highly loaded on the different factors were used and nine subsets of statements were thereafter employed to derive the indices of compatibility. (See Table 1).

Results

Compatibility of Cognitive Structure and Performance

Table 1 shows the mean Z-score grade of the compatible and non-compatible groups. Contrary to what Runkel found, the non-compatible group had significantly higher mean grades than the compatible group in three comparisons (comparison no. 2, 6, and 9).

The mean SAT-V, SAT-M, SAT-total, Achiever Personality, Intellectual Quality, Creative Personality, Social Adjustment and Social Science Interest scores of the OAIS (Opinion, Attitude and Interest Survey, Fricke, 1963) of the compatible and the not compatible groups were compared. Only three comparisons out of 72 comparisons were significant at the .05 level. Two of the significant differences were in intellectual ability, one favoring the compatible group and one favoring the non-compatible group.

How did the two groups compare on the personality variables? The only significant mean difference occurred in the Social Adjustment scale. The non-compatible group (N=78, Mean=50.78) scored significantly higher than the compatible group (N=26, Mean=36.58) in one comparison.

---

*personal communication.

Table I
The Mean Performance of Compatible and Non-Compatible
Groups on Nine Comparisons

List of Statements Used	Compatible Group			Non-Compatible Group		
	N	Mean Z-Score	S.D.	N	Mean Z-Score	S.D.
1. A,C,E,G,I	82	5.09	.93	27	4.72	1.11
2. B,D,F,H,J	73	4.87	1.00	36	5.26*	.91
3. A,C,F,G,I,J	60	4.98	1.01	49	5.02	.96
4. B,C,D,F,I,F	54	4.84	.90	55	5.12	1.05
5. A,B,D,G,H,I	49	4.83	.95	60	5.13	1.00
6. B,D,E,F,H,J	57	4.81	1.03	52	5.21*	.89
7. A,C,D,E,H,I	49	4.93	.98	60	5.06	.99
8. A,C,D,E,F,H,I	27	4.81	.88	82	5.06	1.01
9. A,B,C,D,F,G,I	29	4.65	.96	80	5.13*	.97

* The mean significantly higher at the .05 level.

Compatibility of Cognitive Structure Among Teachers

Compatibility among the four teachers was also investigated. The results indicated that none of the nine sets of statements would produce complete compatibility among the four teachers. There was at least one noncollinear viewpoint between every pair of teachers.

Discussion

Although the results of the present study failed to support Runkel's finding, there are some major differences in research design and procedures between the present sudy and Runkel's. The differences are:

(1) The statements or stimuli were different. Runkel used five statements on general scientific issues; Our statements were composed with more direct reference to psychology.

(2) Runkel used the method of triads ('order 2/3'). In the method of triads, each stimulus is presented to the subject three times when five stimuli are used. Therefore, some inconsistency of stimulus preference may occur. The inconsistency of preference was interpreted as "uncertainty" on the part of the subject about putting a simple order on the stimuli. 54 subjects with 30% or more of this kind of inconsistency were eliminated from Runkel's sample of 145. In the rank order method which we used, no inconsistent preference of stimuli can occur. Thus we used the data from all subjects.

(3) Runkel also examined the change of compatibility of cognitive structure from the beginning of semester to the end of semes-

ester. He used only those subjects whose cognitive structures were collinear with their instructors in both pretest and posttest. Runkel's sample was reduced to 42 subjects out of the original sample of 145 by these several steps of elimination. In the present study, the whole sample was used without any procedure to eliminate those subjects whose preferences were inconsistent or those subjects who were "unwilling" to put the stimuli into a simple order. In other words, the subjects used in the present study were not so "pure" as those subjects used in the Runkel study.

(4) The number of stimuli used was also different. The ratio of compatible scales decreases as the number of stimuli increases. Table 2 shows a comparison of the percentage of the compatible scales for 5, 6, and 7 stimuli.

Table 2
The Relationship between the Numbers of Stimuli
And the Ratio of Collinearity

Number of Stimuli	Expected Ratio	Actual Ratio Obtained in the Present Study
5	.583 (70/120)	.745, .664
6	.350 (252/720)	.445 to .545
7	.164 (824/5040)	.244, . 245

It seems that there is a limit in the number of stimuli to be used in the collinearity study in order to avoid classifying most subjects into the not compatible category.

When the method of triads is used, the number of items is 10 for 5 stimuli, 20 for 6 stimuli, and 35 for 7 stimuli. Thus large numbers of stimuli produce both small numbers of collinear responses and excessively long tests, if triads are used.

Second Study

The second study was carried out to replicate Runkel's study using exactly the same stimuli, the same procedure of constructing the I-Scale and the same criterion to select the subjects using new stimulus statements as a separate test. The description of methods is as follows:

Method

Subjects

The subjects consisted of 201 students enrolled in eight sections of an introductory psychology course in the winter semester of 1966. Only 173 of these subjects participated in both pretest and posttest. The eight sections were taught by five teaching fellows. Two of the teachers were women.

Procedure

The five original Runkel statements (Set I) (Appendix B) were used in this study. These five statements were presented in ten triad items as Runkel had done. Each subject was asked to indicate the statement in each triad with which he most agreed, and the statement with which he least agreed. In addition, five new statements (Set II) (Appendix B) were also used to construct another 10 triad items. The selection of these new statements was undertaken in the following way. A total of 21 statements concerning human behavior and psychological viewpoints was submitted to six judges. Each judge was asked to rate each statement based on the following two criteria: (a) The statement could be judged on the basis of a variety of reasons and viewpoints; and (b), The statements could be discriminated from each other in regard to a person's degree of agreement or disagreement with the statement. These five newly chosen statements were more psychological in connotation than the set I statements. The purpose of using these new statements was to provide some comparative data on the effect of stimuli.

The twenty triad items were administered to the subjects both at the beginning (pretest) and at the end of the semester (posttest). The instructors were given the test only once. The subject's pretest and posttest I scales were compared with his instructor's I scales to determine the collinearity of cognitive structure between them.

The same criterion of 30% or more inconsistency used by Runkel was used, reducing the sample size to 106 subjects for the statement set I sample and to 103 for the statement set II sample.

Four subgroups of subjects can be identified according to the collinearity patterns of pretest and posttest indices.

Subgroup	1	2	3	4
Pretest	Non-Collinear(0)	Collinear(1)	Collinear(1)	Non-Collinear(0)
Posttest	Non-Collinear(0)	Collinear(1)	Non-Collinear(0)	Collinear(1)

The course grade was employed as a measure of performance level. A z-score conversion of course grade with a mean of 10 and a standard deviation of 2 and a percentile rank of course grade within each section were also used in order to avoid any possible imcomparability of course grade between different sections.

Results

Table 3 and Table 4 present the mean performance levels of four subgroups of collinearity patterns based on the I-scales generated by the set I and the set II statements respectively.

Table 3
Mean Performance of Four Groups on Set I
Collinearity Pattern

Subgroups	Non-Collinear Non-Collinear	Collinear Collinear	Collinear Non-Collinear	Non-Collinear Collinear
Mean Grade	2.86	2.67	2.72	2.87
Mean z-Score	10.22	9.81	9.91	10.32
Mean Percentile Rank	54.71	47.08	47.94	52.87
N	14	51	18	23

Table 4
Mean Performances of Four Groups on Set II
Collinearity Patterns

Subgroups	Non-Collinear Non-Collinear	Collinear Collinear	Collinear Non-Collinear	Non-Collinear Collinear
Mean Grade	2.90	2.68	2.82	2.79
Mean z-Score	10.42	9.83	10.34	9.87
Mean Percentile Rank	55.10	47.21	53.64	48.21
N	10	68	11	14

No significant differences between means among groups were found by the F-tests. Again, the original hypothesis was not supported and again the non-collinear students tended to perform better than collinear students.

Discussion

The second study was an attempt to replicate Runkel's experiment employing the same stimuli, the same procedure, and the same criterion. But the results failed to confirm Runkel's hypothesis. The failure forced us to examine the original hypothesis and model more carefully.

We presume that cognitive structure is a multidimensional or multi-facet structure. The compatibility of cognitive structures as indicated by the collinearity of given I scales, may only be compatibility between particular aspects of the cognitive structure. In fact compatibility of I scales with small numbers of stimuli does not even insure that subjects are necessarily using the same dimensions. This is evidenced by the fact that many subjects not compatible in the set I stimulus I scales, were found to be compatible in the set II stimulus I scales. On the other hand, several subjects who were not compatible in the set II stimulus I scales were found to be compatible in the set I stimulus I scales. Above all, no subjects were found to be not compatible with their instructors in both the set I and the set II stimulus scales. Table 5 shows the joint classification of 106 subjects in the compatibility patterns based on the two sets of I scales.

Table 5

The Joint Classification of 106 Subjects in the Compatibility Patterns

		Set II Compatibility Patterns**					
Group		00*	11	10	01	Inconsistent	Total
Set I Compatibility Patterns	00	0	6	1	3	4	14
	11	5	22	5	3	16	51
	10	1	11	0	1	5	18
	01	2	10	2	2	7	23
Total		8	49	8	9	32	106

* 00 means non-compatible in both pre- and post-test.
11 means compatible in both pre- and post-test.

**Only seventy-four subjects out of 103 subjects had consistent I scales in both Set I and Set II statements.

Therefore, it is highly possible that two individuals may be compatible in certain aspects of cognitive structure, and not compatible in others. The I scales generated by the responses to the five stimuli represent only a small portion of the cognitive domain. One possibility for further research would be to sample a variety of stimuli to represent different salient domains of the cognitive structure, such as different areas of psychological knowledge, some important issues of life, or some interest domains. By patterning the indices of compatibility on several relevant dimensions of the cognitive structure, a continuum of compatibility will be constructed. Each subject could be categorized by his degree of compatibility, and be located on a continuum instead of being classified into an all or none dichotomous category. Another possibility would be to assess the relationship between the compatibility of cognitive structure in each content area and student performance in that particular area. The present studies suggest the complexity of the problem and the necessity of testing hypotheses on a variety of stimulus domains.

References

Coombs, C. H. A Theory of Data. New York: Wiley, 1964.

Fricke, B. G. Opinion, Attitude and Interest Survey Handbook. Ann Arbor: University of Michigan. Evaluation and Examintion Division, 1963.

Lingoes, J. C. and Guttman, L. Non-Metric factor Analysis: A rank reducing alternative to linear factor analysis. Multivariate Behavioral Research, 1967. 2, 485-505.

Runkel, P. J. Cognitive facilitation of Communication effects. Uppublished Ph.D. Dissertation, 1956, a.

Runkel, P. J. Cognitive similarity in facilitating Communication. Sociometry, 1956, 19, 178-191, b.

IV - 4a: The Effects of Perceptual Factors on the Index of Co-linearity

Marilyn Wernander and W. J. McKeachie

In recent years, several approaches to the study of facilitation of communication have emerged. Runkel, in his doctoral dissertation (1956), described and tested one approach. He states: "This, then, is the thesis of this dissertation in its most general expression: that similarity of structure between two cognitive fields increases the efficacy of communication between them." (p. 4) In order to test this thesis, some method of comparing cognitive fields which enables the experimenter to discern their similarity or dissimilarity, must be developed. One such method was developed by Runkel in his dissertation.

> The contribution of this dissertation to the problems of communication lies not in the general terms of the problem chosen for study, but rather in the forms by means of which quantification has been applied to similarity of cognitive structure. I have tried to investigate the effects of similarity not by chosing some nameable dimension of similarity which might discriminate between random and regular communicative effects, but have instead sought to provide a form of describing cognitive structure such that similarity may be invariant over content. In the present study, the particular index which furnishes operations for assessing similarity of cognitive structure is one (out of a number which might be derived from the basic concepts) which I have labelled "co-linearity." (p. 6)

The index of co-linearity makes use of the unfolding technique. (For a complete description of this technique, see Runkel, 1966, pp. 17-21.)

The subject expresses his preferences over a group of stimuli, and from these preferences a rank-order of the stimuli is derived if the subject's preferences are transitive. The stimuli are ambiguous, and thus could be ordered according to several different attributes or combinations of attributes. The derived rank-orders of different subjects are then compared; if it appears according to criteria related to Coomb's unfolding model that the two rank-orders are based on the same attribute or combination of attributes, then these two rank-orders are said to be co-linear. It must be noted that this technique designates as non-co-linear those pairs of rank-orders that, according to the model, could not possibly have been based on the same attributes, but pairs designated as co-linear may or may not have been based on the same attributes.

Runkel tested a series of hypotheses related to his basic thesis. Two communication situations, a college course in introductory psychology and a men's cooperative residence, were used; discussion of the latter communication situation is not essential to the present paper and will not be included. Runkel's basic prediction regarding the former situation was that students who were co-linear with their instructors would be graded higher by those instructors than students who were not co-linear with them.

Runkel composed a list of 5 statements "which could be seen as related to the content of the course, but which were not assertions of the kind which would be made as part of the material to be learned in the course..." (p. 56) It is assumed that, in ordering these statements, the subject is ordering them in terms of an attribute or combination of attributes which he himself believes are relevant. Therefore, Runkel's index of co-linearity compares the basis upon which the student orders the stimuli to the basis upon which the instructor orders the stimuli. His basic prediction concerning this classroom experiment is upheld by the data, and the results of this experiment lend support to his basic thesis "that similarity of structure between two cognitive fields increases the efficacy of communication between them." (p. 4)

However, the question inevitably arises of how one person's correct or incorrect perception of the cognitive structure of another person affects the facilitation of communication. The importance of this question is well illustrated by Runkel's classroom situation: One wonders whether the student's basis for ordering these statements is really his own or is influenced to some degree by the basis that he thinks his instructor would use to order the statements. Runkel states that John R. P. French called his attention to this point in a personal communication.

> The composition function (of the different attributes according to which the stimuli are ordered) [parenthesis mine] being estimated by the co-linearity index has been conceived as typical of the individual's weighting of attributes in the classroom situation being investigated. French's suggestion, however, is that the composition function used by the individual may rather be specific to the interaction situation with the teacher. The point here is that in communicating with the teacher...the weighting of attributes which is selected may be the weighting which is perceived by the individual to be the teacher's weighting. (p. 43)

This point is especially relevant in light of the fact that the five items to be rated are related to the content of the course.

Runkel, in reply to French's remarks, suggests that the validity of this point could be tested by asking the subjects to order the statements as they think their instructor would order them. Referring to the co-linearity indices computed from these orderings and the instructor's orderings, Runkel states: "If the co-linearity effects were different from or better than, the effects of co-linearity given by the index used in the present investigation, then the theory would need to be made more subtle." (p. 43-44)

It is quite possible that the co-linearity effects measured by these two indices would be quite different. A student may possess a cognitive structure quite different from that of his instructor; nevertheless, this student may be able to perceive accurately his instructor's cognitive structure. Using this knowledge, the student is better able to discern which test answers the instructor would judge as correct than a student who incorrectly perceives his instructor's cognitive structure. Based on her own teaching experience, the author feels that, generally speaking, students are more concerned with "what the instructor wants" than with what they themselves feel is correct. Therefore, the main hypothesis to be investigated in the following experiment is derived from Runkel's suggestion that the indices of co-linearity computed from the instructor's ratings of these five statements, and his students' perceptions of his ratings, will be an equivalent or better predictor of the students' grades from that instructor than the indices of co-linearity computed from the instructor's ratings and the students' ratings (the higher grades being received by the co-linear students).

This hypothesis and the main hypothesis investigated by Runkel in his classroom experiment both assume that when a student is asked to rate the statements according to his own preferences, the combination of attributes used in this rating is really his own. The observation of French related by Runkel appears to question this assumption. Although Runkel does not specifically address himself to this point, the author feels that it does demand some investigation. If the attribute or combination of attributes used by Runkel's subjects to order these five statements are influenced to some extent by the combination of attributes that they think their instructor would use, then Runkel's data may actually be more representative of the students' perceptions of their instructor than of their own cognitive structures. If this is in fact the case, then the student would be expected to use the same attribute or combination of attributes in rating the five statements regardless of whether he were asked to rate them according to his own preferences or according to what he perceives to be his instructor's preferences. Two such ratings made by the same student would then be expected to be co-linear.

In the present study, the students are asked to make both kinds of ratings. These are used to test the first hypothesis, and indices of co-linearity between these two ratings are also computed in an attempt to determine the extent to which the students do use the same attribute or combination of attributes for both ratings.

Method

Two written tests were used in this experiment. Both consisted of Runkel's original 5 items presented to the subject in triads (the 10 possible combinations of 5 items taken 3 at a time, and one practice triad which was a duplicate of one of the 10). The instructions on test 1 were Runkel's original instructions asking the student to rate the statements according to how he himself feels. Runkel's instructions were modified for test 2 so that the student was asked to rate the items as he felt his instructor would rate them. On both tests, students selected the most-agreed-with and the least-agreed-with statement in each triad (copies of these tests are at the end of this section).

Sixty undergraduates taking a course in introductory psychology during the fall semester of 1965 served as subjects. Twenty-two were instructed by one teaching fellow and 38 by another.

Both teaching fellows were given test 1. Tests 1 and 2 were administered to the students during the last two weeks of the semester during the last two weeks of the semester during regular class periods, approximately 10 days apart. The students of each teaching fellow were arbitrarily divided into 2 groups, one group taking test 1 first and the other taking test 2 first. During the second testing session, the students took whichever test they had not taken during the first session.

One rank-order was computed for each teaching fellow. Both teaching fellows gave transitive, highly consistent rank-orders. Subjects who had only taken one test, who had given intransitive ratings, or who did not meet the arbitrary 70% consistency requirement used by Runkel were eliminated. After these eliminations, there remained 34 subjects, 18 for one teaching fellow and 16 for the other.

Two indices of co-linearity were computed for each subject: co-linearity of the student with his teaching fellow, and co-linearity of the student's perception of his teaching fellow with the teaching fellow. The letter grades assigned to the students by their instructors were changed to numerical grades by equating an A to 9, an A- to 8, a B+ to 7, and so forth. These numerical grades were then converted to Z scores. For each index of co-linearity, the mean grade of those students who were co-linear and the mean grade of those who were not co-linear were computed and compared using one-tailed T-tests.

A third index of co-linearity was also computed. This was the index of co-linearity between the rank-orders given by a subject on test 1 and on test 2. By computing this third index, it was hoped that some indication of the extent to which the subjects used two different combinations of attributes on the two tests might be obtained.

The 18 students of one teaching fellow had a mean grade of 5.278 and a standard deviation of 2.785. The 16 students of the other teaching fellow had a mean grade of 5.875 and a standard deviation of 1.495. Both of these means fall between a B- and a B when converted back into letter grades.

Results

On test 1, 15 of the 34 subjects were co-linear with their teaching fellow, and 19 were not. For each instructor, 7 of 18 for one, and 8 of 16 for the other, were co-linear with their instructor. A one-tailed T-test indicated that there was no significant difference between the mean grade of those students who were co-linear with their instructor and the mean grade of those who were not. When the students of each instructor were considered separately, one-tailed T-tests showed no significant difference between the mean grades of those students who were co-linear with the instructor and those who were not, for each group. These results would seem to conflict with those of Runkel; this point will be discussed below (see Table 1).

On test 2, 20 students' perceptions of their teaching fellow were co-inear with their teaching fellow, while 14 were not. For one teaching fellow, 12 of 18 were co-linear, and for the other, 8 of 16 were co-linear. When the mean grade of those students whose perceptions were co-linear was compared with the mean grade of those whose perceptions were not, a one-tailed T-test indicated no significant difference. Considering the instructors separately, the difference in mean grades was also not significant, for both groups. Because all of the above T values were insignificant, a more complete statistical analysis to determine which of the two indices of co-linearity was the better predictor of grades seemed unnecessary.

When the third index of co-linearity was computed, the co-linearity or non-co-linearity of the students' ratings with their perceptions of their teaching fellows' ratings, a one-tailed T-test showed no significant difference between the mean grades of co-linear and non-co-linear students (see Table 1). Only 6 of 34 subjects were non-co-linear on this index; 3 for each instructor. It was noted in the introduction that two rank-orders said to be co-linear may or may not actually have been ranked according to the same combination of attributes. Consequently, some proportion of the 28 students identified as co-linear actually may not be. However, when one compares 28 of 34 co-linear on this index with 15 of 34 co-linear on test 1, and 20 of 34 co-linear on test 2, it is obvious that this proportion is noticeably larger. Chi-square tests were performed comparing the frequencies of co-linearity on the 3 indices (see Table 2). These tests indicate that the number of students identified as co-linear on the third index significantly exceeds the frequency that would be expected. The implications of this result will be discussed in the next section.

When the mean grades were compared, of those who were co-linear on both test 1 and test 2 and those who were non-co-linear on both tests (N's = 12 and 11), again the difference was insignificant. There was no significant difference between the mean grade of the 34 subjects used for this experiment and the mean grade of those eliminated for the reasons listed above. Chi-square tests indicated that the order in which the two tests were taken had no effect on any of the three co-linearity indices.

Discussion

It was noted above that the results of this experiment would seem to conflict with the results of Runkel's experiment, in that student grades were not found to be related to the co-linearity of the student with his teaching fellow. However, there is one difference between Runkel's method and the method used in this experiment, which may account for these conflicting results. Runkel's subjects took his original test twice: once at the beginning of the semester and once at the end. Only subjects whose rank-orders on both pre- and post-test were co-linear or non-co-linear with their teaching fellow were used. Thirty-four out of 76 subjects were eliminated by this criterion. In the present study, students ranked the items twice at the end of the semester: once according to their own feelings (Runkel's original test) and once according to how they perceived that their teaching fellow would feel about the items. It is quite possible that the more stringent criterion used by Runkel is necessary to obtain the relationship he found between co-linearity and grades.

The discrepancy between Runkel's method and the method used here may also account for the non-significant results obtained when trying to relate grades to co-linearity of the students' perceptions of their teaching fellow.

To the author's knowledge, no attempt to use the index in this way has previously been made. The results obtained do not support the main hypothesis of this experiment. However, neither do they disconfirm it. No statement can be made as to whether or not the index of co-linearity based on students' perceptions of their instructor is an equivalent or better predictor of grades than the index of co-linearity based on the students' own feelings, since neither index was related to grades to any significant extent. There is some uncertainty as to whether the insignificant results were caused by a methodological problem or by an invalid hypothesis.

Applying Runkel's criterion of co-linearity on both a pre- and a post-test to this experiment would cause other methodological problems. The student, no doubt, could complete test 1 at the beginning of the semester. However, it would be highly unlikely that he would have enough information about his teaching fellow to complete test 2 at that time. Even if a student felt that he could complete test 2 then, there is little chance that the rank-order obtained would be of much use, since his perception of his teaching fellow's opinions would undoubtedly change during the semester. This problem could probably be solved by having the students take both tests at the middle of the semester and again at the end of the semester.

As stated above, Runkel eliminated 34 of 76 subjects by using this criterion: approximately 45%. By applying the criterion to test 1 in the present experiment, a comparable percentage of subjects would probably have been eliminated. If this criterion were applied to test 2 also, the same percentage of subjects could be expected to be eliminated. There is no guarantee that the subjects eliminated when the criterion is applied to test 2 will be the same as those eliminated when it is applied to test 1. The number of initial subjects required to insure a sufficient number after the above eliminations and also the consistency and transitivity eliminations are made is beyond the practical limits of this experiment.

A very rough approximation to Runkel's criterion of co-linearity of non-co-linearity on both pre- and post-tests can be derived from the data of the present experiment by comparing only those subjects who were co-linear or non-co-linear on both test 1 and test 2. The differences between this rough approximation and Runkel's original experimental design cannot be ignored; however, this rough approximation is closer to Runkel's design than is the original data in the present experiment. The mean grades of these two groups of students were not significantly different, as reported above.

As stated in the introduction, the third index of co-linearity, the co-linearity or non-co-linearity between the students' ratings based on their own feelings and their ratings based on their perceptions of their teaching fellows, was computed in an attempt to determine the extent to which the students used different combinations of attributes for the two ratings. If different combinations of attributes were being used by all students, it is highly unlikely that only 6 of 34 students would be non-co-linear on this index.

This result has two possible explanations. The first is that most students used the same dimension because, as French suggested, the combination of attributes used by the individuals to judge the five statements is specific to the situation. Their own judgments in the classroom situation are influenced by what they perceive their instructor's judgements to be. Therefore, the ratings given by each student on test 1 and test 2 should not differ substantially.

The second possibility is that some sort of methodological contamination took place. The students' ratings on the test they took during the second session were influenced by the fact that they rated the same statements in the first session. The essential question is whether the students' ratings on the test taken during the second testing session would have remained the same if they had not been tested during the first session

The thought that a high degree of co-linearity on the third index could be the result of a methodological problem rather than a confirmation of French's conjecture has been a nagging possibility since the conception of this experiment. The two tests were given ten days apart in the hope that enough other material would pass between the two sessions to blur the subjects' memory of them. Allowing much more than ten days time to elapse between testing sessions could necessitate the consideration of differences in subjects over time as an additional factor. This did not seem to be desireable. Had the proportion of co-linear students on the third index been comparable to or smaller than the proportion on the first and second indices, the possibility of such a methodological problem would have been eliminated. However, French's proposition that the studens' ratings are specific to the communication situation would also have been disconfirmed. If the students use different combinations of attributes for the two ratings, it cannot be said that their ratings based on their own opinions have been very much influenced by their perception of their instructor's opinions.

The author believes that an experimental design can be devised that would discriminate between the two possible explanations for this high incidence of co-linearity on the third index. This design would require two testing sessions and two sets of items to be rated. One set of items would be administered outside class in a situation completely disassociated from the instructor and the classroom. After this, the students would be asked in the classroom by their instructor to rate a second set of items. The students would be instructed at both times to rate the items according to how they thought their instructor would rate them. The two ratings of the second set of items would be expected to be co-linear for a large proportion of the subjects, inasmuch as these ratings are a replication of the present experiment. If a large proportion of the subjects give two ratings of the first set of items that are co-linear also, then the high rate of co-linearity between self-ratings and perceived teaching fellow ratings in the present experiment can be assumed to be caused by a methodological problem. The fact that the student has rated the items once influences how he will rate them a second time.

If, however, the proportion of subjects giving co-linear ratings on the first set of items is significantly smaller than the proportion of subjects giving co-linear ratings on the second, then the high rate of co-linear responses can be assumed to be the result of the specific communication situation. Such a result would lend support to French's conjecture.

The experimental design just described was not used, because two comparable sets of previously tested items were not available. Runkel does use a second set of five items in his residential college experiment. However, there was no way of determining how comparable these five items were to the five items used by Runkel in his classroom experiment and used in the present experiment. In the residential college experiment, Runkel had his subjects rank-order the statements several times during the semester rather than presenting the statements in triads. Secondly, the content of the residential college statements concerned beliefs about sexual behavior, a topic that may or may not elicit responses comparable to those elicited by the five items used in this experiment. Developing and testing a set of comparable items was considered beyond the scope of the present experiment.

In summary, the basic hypothesis of this experiment was not confirmed. Neither co-linearity of the student himself with the teaching fellow nor co-linearity of the student's perception of the teaching fellow with the teaching fellow were found to be related to student grades. A very high proportion of the subjects was co-linear on the third index of co-linearity, co-linearity of the student himself with his perceptions of the teaching fellow. This result should be investigated further to determine whether it is the result of a methodological problem, or whether it demonstrates that subjects' ratings of such statements according to their own opinions are in fact influenced by the classroom situation, and these statements are actually being rated more according to the student's perception of his instructor's opinions than his own.

References

Coombs, C. H. A Theory of Data. New York: John Wiley & Sons, 1964.

Runkel, P. J. Cognitive facilitation of communication effects. Unpublished doctoral dissertation, University of Michigan, 1956.

Table 1

Comparison of mean grades of co-linear students with non-co-linear students on the three co-linearity indices

INDEX 1:
Student with
teaching fellow

Sections considered separately

	N	M		N	M
C-L	7	-.15*	C-L	8	.08
N-C-L	11	.10	N-C-L	8	-.08
	T = -.49			T = .31	

Sections considered together

	N	M
C-L	15	-.03
N-C-L	19	.09
	T = -.13	

INDEX 2:
Perception of
teaching fellow
with
teaching fellow

Sections considered separately

	N	M		N	M
C-L	12	.11	C-L	8	.00
N-C-L	6	-.22	N-C-L	8	.00
	T = .63			T = .00	

Sections considered together

	N	M
C-L	20	.07
N-C-L	14	.09
	T = .44	

INDEX 3:
Student with
perception of
teaching fellow

Sections considered together

	N	M
C-L	28	.03
N-C-L	6	-.11
	T = .31	

Sections were not considered separately for index 3 because of the small number of non-co-linear students.

*All mean grades are computed from Z-scores.

Table 2

Comparison of co-linearity frequencies for the 3 co-linearity indices

Tests:	1	2	3		
C-L	15	20	28	$\chi^2 = 10.71$	$p < .005$
N-C-L	19	14	6	$\mu = 2$	

Tests:	1	2		
C-L	15	20	$\chi^2 = .94$	not significant
N-C-L	19	14	$\mu = 1$	

Tests:	2	3		
C-L	20	28	$\chi^2 = 3.47$	$.05 < p < .10$
N-C-L	14	6	$\mu = 1$	

Tests:	1	3		
C-L	15	28	$\chi^2 = 9.11$	$p < .005$
N-C-L	19	6	$\mu = 1$	

Test 1: Index of co-linearity between student and instructor

Test 2: Index of co-linearity between student's perception of instructor and instructor

Test 3: Index of co-linearity between student and student's perception of instructor

TEST 1

Please fill out these two items first

NAME (Please Print) ______________________________

Name of Instructor ______________________________

On the following pages some statements appear in groups of three.

You will find the statements repeating themselves in different combinations as you go from group to group. The reason for this is that we can, in this way, ask you to compare each of these statements with others, without making any one comparison too complicated.

Although these statements are on different topics, some of them may be fairly close to what you, yourself, might say or believe. With others, you may disagree more or less strongly.

M Of the three statements, choose the one with which you most fully agree (or disagree with all three, this would be the one with which you least disagree). Put an "M" beside this statement.

L Then choose the statement with which you least agree (or with which you most disagree). Put an "L" beside this statement.

IN EACH GROUP, MAKE TWO (BUT ONLY TWO) MARKS.

1. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

2. ____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

3. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

4. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

5. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ People who have a firm moral code are in general better adjusted than those who haven't.

6. ____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The biggest weakness in present-day psychology is that it is too theoretical.

7. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

8. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

9. ____ The biggest weakness in present-day psychology is that it is too theoretical.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

10. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ The biggest weakness in present-day psychology is that it is too theoretical.

11. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

Note: Item 1 was used as a "warm-up" item and was not tallied.

TEST 2

Please fill out these two items first

NAME (Please Print) ______________________________

Name of instructor ______________________________

On the following pages some statements appear in groups of three.

You will find the statements repeating themselves in different combinations as you go from group to group. The reason for this is that we can, in this way, ask you to compare each of these statements with others, without making any one comparison too complicated.

Although the statements are on different topics, some of them may be fairly close to what your teaching fellow might say or believe. With others he may disagree more or less strongly.

M Of these three statements, choose the one with which you think your teaching fellow would most fully agree (or, if you think he would disagree with all three, this would be the one with which you think he would least disagree). Put an "M" beside this statement.

L Then choose the statement with which you think your teaching fellow would least agree (or with which you think he would most disagree). Put an "L" beside this statement.

IN EACH GROUP, MAKE TWO (BUT ONLY TWO) MARKS.

1. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

2. ____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

3. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

4. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

5. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ People who have a firm moral code are in general better adjusted than those who haven't.

6. ____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The biggest weakness in present-day psychology is that it is too theoretical.

7. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

8. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

9. ____ The biggest weakness in present-day psychology is that it is too theoretical.

____ People who have a firm moral code are in general better adjusted than those who haven't.

____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

10. ____ The strongest influence in shaping a person into the kind of person he becomes, is his mother.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

____ The biggest weakness in present-day psychology is that it is too theoretical.

11. ____ Individuals could be changed in practically any way one might wish if the environment could be appropriately controlled.

____ The biggest weakness in present-day psychology is that it is too theoretical.

____ The conditions of living in the U.S.A. tend to narrow the range of things we are able to decide to do, think about, etc.

Note: Item 1 was used as a "warm-up" item and was not tallied.

IV - 5

Ability to Judge Personality Before and After Taking an Elementary Psychology Course

Carol Kimeldorf and John E. Milholland

An instructor of elementary psychology has many objectives; these may include imparting of ideas, values, and behaviors, as well as knowledge of subject matter. One of the behaviors stressed may be the ability to judge personality. The question arises: does ability to judge personality improve during a course in introductory psychology?

Evidence points to a negative answer. Buzby (1924) found that students beginning a course in elementary psychology were more accurate on a test of judging emotional expressions in the Boring-Titchener models than those who had completed it. Johnson and Vogtmann (1955) used a commercial motion picture to test introductory psychology students' abilities to apply concepts and principles of motivation, social relations, and personality to the behavior of the actors in the film. The authors concluded that "performance on the motion picture test was not greatly improved by the beginning psychology course." (Johnson and Vogtmann, 1955, pp. 70-71)

Other studies comparing subjects with more training, background and experience in psychology with those who were relatively naive, reported almost unanimously that the less trained were equal or superior in judging ability. Hanks (1936) had six judges of varying backgrounds in psychology and training in personality assessment predict subjects' answers to inventory questions from biographical and other inventory data. He found no relationship between amount of training and number of correct responses. Two experiments performed by Luft (1950) support the conclusions of Buzby and Hanks. Using summaries presented by a patient's therapist and raw case material, a group of physical scientists did as well as a group of psychiatrists, social workers, and clinical psychologists in predicting projective test responses of patients and surpassed them in predicting responses on objective questionnaires. Estes (1938) had groups of judges estimate various aspects of 15 subjects' personalities after observing motion picture records of their behavior. Among a group of psychiatric social workers, no relation appeared between ability to judge and either length of service as psychiatric workers or whether or not the social worker had been psychoanalyzed. In a second experiment involving 56 adults, Estes (1938) reported that the judgments of nine psychology professors included in the group were reliably inferior to those made by the average judge in the experiment. In a study by Wedell and Smith (1951) this conclusion is again supported: inexperienced and untrained interviewers exhibited greater accuracy in estimating self-ratings than highly trained and experienced psychologists, both with "general" and "concrete" questions.

In summary it appears that

> "...physical scientists, and possibly other non-psychologists, e.g., personnel workers, appear to be more capable of judging others accurately than are either psychology students or clinical psychologists. ...There is also evidence that suggests that courses in psychology do not

> improve ability to judge others and there is considerable doubt whether professional psychologists show better ability to judge than do graduate students in psychology." (Taft, 1955, p. 12)

The accumulation of this evidence would appear to eliminate the need for another study in the area of improvement in ability to assess personality after psychological training. However, none of the above investigators studied changes in ability to assess personality. Only two articles (Buzby, 1924; Johnson and Vogtmann, 1955) take into account differences before and after taking a course in psychology. Yet the Buzby study is not actually concerned with personality judgment, but with identification of facial expressions. The Johnson and Vogtmann study had the judges study behavior of actors rather than natural behavior, and is more concerned with interpersonal relationships than with intrapersonal characteristics. In addition, neither of these two studies considered possible teacher influence and differences between instructors' objectives and methods in the various classes and sections as affecting the results. Besides the Johnson and Vogtmann report, the judges actually saw the subjects to be assessed only in the studies by Estes (1938) and by Wedell and Smith (1951). However, in Estes' experiments only physical, non-verbal, behavior was observed, and in the Wedell and Smith study the interviews were not standard, since each interviewer saw the subjects individually and asked his own questions.

Thus, it appears that all of the above experiments leave room for further research because change in the same set of judges was not observed through time; possible differences due to teacher influence or other experiences were not considered; and no non-theatrical, standard situation was created where the judges could view both the physical and verbal behavior of the subjects. According to Cline and Richards (1955) a color, sound-film is needed:

> "This sound-film technique has allowed us to capture a multitude of subtle verbal and visual cues...This has given us an experimental stimulus which is very complex and dynamic, but which can be held constant for all observers (or judges) over a period of time." (p.183)
>
> "Experience with this technique has indicated that ... (presence of camera and sound equipment) does not significantly affect the spontaneity of the interview." (Cline and Richards, 1960, p. 1)

For these reasons as well as those cited above, it was decided to employ the Cline-Richards films in a study of changes in students' ability to judge personality occuring during a course in elementary psychology.

Experiment I

Procedure

Judges were students enrolled in elementary psychology courses at the University of Michigan during the 1964 Fall semester. Three hundred one students provided both pretest and post-test records for measurement of gains, although a few more than that viewed the films each time.

The material used (Cline and Richards, 1960, 1962) consisted of a set of six filmed interviews, each with an accompanying questionnaire, dealing with the interviewees' attitudes, values, and behaviors. A different person was interviewed in each film. The interview procedure "...was sufficiently structured to insure equivalence over interviews (and) probed the following areas: (a) personal values, (b) personality strengths and weaknesses, (c) reaction to the interview, (d) hobbies and activities, (e) self-conception, and (f) temper." (Cline and Richards, 1960, p.1)

The questionnaires, composed of 72 items per film, were divided into four subtests. The first subtest consisting of 20 personality items which the interviewee had checked as True or False with respect to himself, was given to the judges with instructions to mark the items as they thought the interviewee had. In the second subtest the judges were presented with 20 pairs of adjectives and were required to select from each pair, the adjective more descriptive of the person. The third subtest involved judging the interviewee's real life behavior: 20 statements about the person were made, and the judges had to indicate whether each statement was True or False. The fourth subtest, a "values-belief" questionnaire in the area of religion, consisted of 12 Likert-type items: here the judges also predicted how the interviewee had responded to this scale. The keys for Subtests 1, 2, and 4 consisted of the interviewee's own responses; Subtest 3 was keyed in accordance with information gathered by Cline and Richards from friends of the interviewee.

Each judge thus received five scores for each film he viewed: the four subtest scores and a total score. The first three subtests were scored by the formula, Rights minus Wrongs; the Likert-type items by Rights minus 1/4 Wrongs. The total was simply the sum of the four subtest scores. In order to avoid any negative scores 20 points were added to each of the five scores as originally computed. These adjusted scores will be referred to as raw scores.

In part of the study dealing with gain scores the pretest scores for each film were standardized so that the set of scores for each subtest had a mean of 10 and a standard deviation of 2. The same linear transformation required to standardize the pretest scores was then applied to the post-test scores for each subtest on each film.

Only the scores of the 301 judges who had seen both two pretest films and two post-test films were used in the analysis of gains. The scores for each judge on the two films given at each sitting were summed for each subtest so that every one had, at this point, just five pretest scores and five post-test scores. Gain scores were obtained by subtracting each judge's summed pretest score for a subtest from his summed post-test score for the corresponding subtest.

The films were shown at the beginning of the semester in section meetings, and again at the end of the semester. While all six films were shown in the pretest and again in the post-test each section saw two films in the pretest and two different films in the post-test.

After each filmed interview had been shown the projector was stopped and the judges filled out the corresponding questionnaire.

Classes from fifteen different instructors participated and data for each instructor were treated separately in order to study possible differences there. Computations were carried through by means of programs available on the University of Michigan's IBM 7090 Computer.

Results

When the pretest raw scores for each film were compared with the post-test raw scores, differences in means were found to be inconsequential. The results are shown in Table 1. It seems that ability to judge personality is not consistently improved to any significant degree in the introductory psychology course.

Table 2 shows that the mean gain in ability to judge, for the group of 301 judges was statistically significant at the .05 level. Average improvement, however, was only half a point, less than 1/8 of a standard deviation.

The gain scores were next grouped according to instructor and a one-way analysis of variance carried out for each subtest. While there was no significant instructor effect on three of the four subtests, the F for the total score exceeded the .01 level of significance. None of the negative mean gains for the individual instructors' classes, shown in the next to last column of Table 2, was significantly different from zero (.05 level, two-tail), but three of the positive ones were. These were for instructors 2, 12, and 13. It may be noted, however, that the student groups for these instructors were among the four lowest on the pretest. The students of the other instructor in the low group, No. 6, showed the third largest gain, but the number of cases was too small for statistical significance. Gains on total scores thus seem to be more a function of initial low ability than of anything an instructor does. Perhaps students with poor interpersonal perceptions to start with do gain something in an introductory psychology course, but those who are already average or better do not.

It must be recognized, of course, that with the gain score standard deviation of 4 points some 10% to 20% of students may have gained as much as 5 or more points. If an explanation were sought for these cases, however, we should also have to explain the losses of similar magnitude by approximately the same number of judges.

Experiment II

In order to gain further insight into the nature of personality judgments, a second experiment was carried out. Ability to judge personality may consist of two relatively independent components (Cline and Richards, 1960 Passini and Norman, 1966): (1) stereotype accuracy, or sensitivity to the generalized other, measuring the accuracy of prediction of the norm for the group of persons about whom the predictions are made; and (2) differential accuracy, or interpersonal sensitivity, measuring sensitivity to individual differences. While both

Table 1
Pretest, Post-test, and Stereotype Raw Scores for Each Film

Film and Subtest	Pretest			Post-test				Stereotype Scores			
	N	Mean	S.D.	N	Mean	S.D.	t	N	Mean	S.D.	t
DD: 1		19.19	5.76		21.94	5.05	3.48**		25.92	5.61	-5.59**
2		27.48	6.28		29.52	5.63	2.34*		28.86	6.22	-1.17
3		23.34	4.74		25.17	4.91	2.97**		25.12	5.71	-1.91
4		20.71	2.56		21.17	2.84	1.18		22.12	2.96	-2.82**
Total	91	31.64	13.27	104	37.81	11.53	3.43**	49	42.24	13.69	-4.38**
EE: 1		21.26	4.43		20.54	5.29	-1.26		18.55	6.83	2.58*
2		28.15	4.52		29.00	3.78	1.77		24.38	5.03	4.70**
3		21.40	5.92		21.66	7.01	.34		18.11	7.93	2.65**
4		23.54	2.64		23.81	2.65	.87		22.68	3.36	1.59
Total	193	34.21	10.62	125	34.86	12.07	.49	47	24.36	15.69	4.04**
F: 1		28.98	3.23		28.75	3.87	-.50		28.04	3.48	.44
2		32.29	3.64		31.58	3.40	-.66		29.40	4.21	4.19**
3		25.63	3.31		25.70	3.61	.16		22.70	3.80	4.65**
4		22.96	2.43		22.51	2.49	-1.45		20.81	2.69	4.78**
Total	160	49.86	7.04	106	48.54	7.67	-1.74	47	40.96	7.62	7.12**
T: 1		23.40	3.23		23.50	2.90	.29		22.53	3.42	1.53
2		35.88	3.07		36.01	2.87	.37		32.80	4.27	4.53**
3		24.75	3.78		25.13	3.75	.86		23.73	4.10	1.55
4		22.44	2.44		22.64	2.97	.61		20.93	3.57	2.70**
Total	206	46.41	6.52	115	47.14	6.92	.92	45	39.78	8.36	4.95**
X: 1		22.87	4.21		22.80	4.07	-.09		22.82	3.59	.06
2		25.61	4.95		26.50	4.33	1.06		27.16	4.84	-1.49
3		23.83	4.99		26.09	5.00	2.57*		25.36	5.35	-1.39
4		20.57	2.21		21.01	1.78	1.19		20.11	2.10	.43
Total	46	33.09	9.59	113	36.35	9.03	1.96	44	35.45	9.40	-1.17
Y: 1		33.86	2.90		33.71	3.34	-.38		22.26	5.62	13.18**
2		31.03	3.89		31.13	4.80	.17		24.17	7.43	5.86**
3		33.29	3.57		33.15	4.16	-.26		18.52	6.29	15.55**
4		21.91	2.78		21.95	2.64	.13		22.02	2.96	-.21
Total	101	59.69	6.74	111	59.95	8.85	.24	46	26.65	16.26	13.16**

*Significant at .05 level, two-tail.
**Significant at .01 level, two-tail.

Table 2

Total Score Pretest Scores, Post-Test Scores, and Gain Scores of Sections Taught by Fifteen Instructors.

Instructor	N	Pretest Scores		Post-Test Scores		Gain Scores	
		Mean	s.d.	Mean	s.d.	Mean	s.d.
1	31	20.68	2.49	20.52	2.60	.15	3.76
2	14	18.36	2.64	20.50	2.32	2.14	3.36
3	9	21.78	1.81	20.22	3.29	-1.74	2.98
4	14	20.00	2.24	20.36	2.79	.36	3.39
5	25	20.44	3.41	20.60	3.69	.16	4.78
6	5	18.00	1.27	19.80	3.12	1.80	2.99
7	12	20.58	1.55	19.75	3.70	-.83	4.22
8	35	20.91	2.82	19.86	2.94	-1.07	4.31
9	36	20.00	2.65	20.25	3.32	.25	3.99
10	11	20.55	2.61	20.18	1.53	-.36	3.17
11	8	21.00	2.50	19.88	2.32	-1.13	4.17
12	38	19.76	2.82	21.29	2.75	1.54	3.53
13	50	19.54	3.04	22.12	2.77	2.58	4.12
14	8	20.25	2.05	20.58	3.24	.33	3.52
15	5	21.80	2.04	21.80	2.99	.00	1.26
Total	301	20.16	2.80	20.65	3.68	.50*	4.15

*t = 2.08, significant at the 5% level, 2-tail of these are components of judging ability, one may predominate over the other in a given situation. If the judging ability needed to assess the interviewees in the Cline-Richards films is due to stereotype accuracy, judges who form stereotypes, after being given factual descriptions should do as well in answering the questionnaires as those who have seen the films. However, if differential accuracy is also a significant component, judges who saw the films should respond with greater accuracy.

Procedure

Judges were 22 males and 29 females enrolled in elementary psychology courses at the University of Michigan during the 1964-65 Winter semester.

These instructions were given:

> You are to be given a brief, factual description of six people. You will then be asked to fill out a questionnaire for each person concerning his beliefs, attitudes, values, and characteristics, basing your replies on the picture you form of the person. The questionnaires were originally filled out by the people being described factually, and you are to put yourself in each individual's place, answering the questions as you think he may have answered them. After reading each description answer the corresponding questionnaire.
>
> The questionnaire involves:
>
> 1. Deciding how the interviewee responded to certain personality items describing himself;
> 2. Picking an adjective as most descriptive of the person;
> 3. Judging the interviewee's real life behavior, and
> 4. Predicting how the interviewee responded to a values-belief questionnaire.
>
> You may find that the description does not give you the information needed to adequately answer all the questions, but try to respond from your picture or image of the person. Answer all the questions. When you finish one questionnaire, go on to the next.

Then along with the appropriate questionnaire, factual descriptions for each interviewee were supplied to the judges:

Film DD: Divorced music instructor and composer, in about his late thirties or early forties, hobbies include reading and outdoor sports.

Film EE: Very heavy girl in her late teens, working as a nurses' aide, possesses artistic ability.

Film F: College sophomore coed, sorority president, planning on becoming an elementary school teacher.

Film T: Married woman, formerly a physical education teacher, now working with her husband making ski models.

Film X: A Married, middle class, traveling watch salesman, in about his late thirties or early forties, plays golf.

Film Y: Boy in his late teens, working as a delivery boy, hoping to become a drawer of animated cartoons.

Order of presentation of the questionnaires was staggered so that any possible learning effects should be eliminated.

Results

Pretest raw score means for each variable on each of the six films of the judges who saw the films as pretests were compared to the raw score means of the judges who read the factual descriptions. The results are given in the last three columns of Table 1. The judges who saw the films scored significantly higher in 15 out of the 30 possible comparisons; the significant $\underline{t}$'s occurred in Films EE, F, T, and Y. Judges viewing these films appear to exhibit differential accuracy in addition to stereotype accuracy. However, the results of comparisons between the variables on Films DD and X strongly point to exclusive use of stereotype. Thus, while judging personality of the interviewees on the Cline-Richards films generally appears to involve differential as well as stereotype accuracy, in particular instances only the latter seems to be used.

Discussion

The results of the first experiment indicate that the judges who made the most improvement in ability to judge after taking an elementary psychology course were the ones who were poorest originally. This pattern of association of large gains with low pretest scores and small gains with high pretest scores was also found by Dressel and Mayhew (1954) in a study of the gains made on evaluation study tests over one year by students in four different colleges. Several explanations may be posited to account for these results. First, a beginning course in psychology may give instruction in personality on such an elementary level that only the poorer students benefit; the more able students may have surpassed this level before entering the course. Second, a ceiling effect may be built into the experimental instrument. Perhaps, a score plateau is reached above which it is hard to rise, possibly due to greatly increased difficulty of the questions. If there is a ceiling effect operating, the judges most likely to improve would be the ones who did not reach this plateau during the pretest. Third, regression may have occurred in the post-test; on a chance basis it is more likely for low scores to rise than to fall, and for high scores to drop than to gain.

Experiment I also suggests that there is no important general improvement in ability to judge personality during a beginning course in psychology; nor does it appear to support the hypothesis that improvement depends on instructors' behaviors in the classroom. One implication of these results may be that college students are already skilled in analyzing personality when they enter the elementary psychology course; then aside from terminology and factual ideas relating to the subject matter, psychologists have little to teach students in this area.

A second, perhaps, more acceptable implication is that the students did not learn because they were not taught. In a beginning psychology course, terminology, general concepts, and a method of approach are usually taught. Little practice is given in judging personality. It is possible that most instructors do not consider this kind of achievement a goal of an elementary psychology course.

It may be that psychology instructors stress the value of rigorous, analytical, logical, and conceptual thinking in the realm of human behavior. This type of reasoning may prove detrimental in assessing personality, possibly because of irrationality in human character. Estes (1938) found that his poorest judges, consisting of psychology professors and other faculty members, were the ones whose "process of judgment was typically one of conscientious inference from a conscious review of as many items read...and observed...as could be kept in mind" (p. 234), and of tying what was read to a conceptual anchorage point. The best judges (Estes, 1938) without exception did not attempt a deliberate analysis of what they read and observed as preliminary to making a judgment; their attitude permitted external constraints inherent in the material itself to determine the total impression. Thus, lack of improvement might be accounted for by instructors' emphasis on explicit analysis and inference.

The results of Experiment II indicate that ability to judge personality from the Cline-Richards films involves both differential and stereotype accuracy. Thus, supporting the conclusion of Cline and Richards (1960), judges appear to predict personality of others both in terms of the groups to which they belong and the categories in which they fit, and in terms of the differences between people. While the data on Films DD and X do not support much differential accuracy it is worth noting that the judges who viewed the films received the lowest pretest scores on these two. If these scores are artifactually low for any reason, this may account for both the significant improvement from pretest to post-test for any of the scores in these films as well as the result that the stereotype scores are as high or higher.

In conclusion it appears that students who are originally the weakest improve the most in ability to judge personality during a course in elementary psychology; and differences among sections seem to be sufficiently well accounted for by low means on the pretest. In assessing the people viewed in the Cline-Richards films, judges used both stereotype and differential judgments.

References

Buzby, D. E. The interpretation of facial expression. Amer. J. Psychol. 1924, 35, 602-604

Cline, V. B. Ability to judge personality assessed with a stress interview and sound-film technique. J. abnorm. soc. Psychol., 1955, 50, 183-187.

Cline, V. B., & Richards, J. M. Accuracy of interpersonal perception--a general trait? J. abnorm. soc. Psychol., 1960, 60, 1-7.

Cline, V. B., & Richards, J. M. The generality of accuracy of interpersonal perception. J. abnorm. soc. Psychol., 1961, 62, 446-449.

Cline, V. B., & Richards, J. M. Components of accuracy of interpersonal perception scores and the clinical and statistical prediction controversy. Psychol. Rec., 1962, 12, 373-381.

Dressel, P. L., & Mayhew, L. B. General education Explorations in evaluation. Washington, D. C.: American Council on Education, 1954.

Estes, S. G. Judging personality from expressive behavior. J. abnorm. soc. Psychol., 1938, 33, 217-236.

Hanks, L. M. Prediction from case material to personality data. Arch. Psychol., 1936, 29, No. 207.

Johnson, D. M. & Vogtmann, W. G. A motion picture test of achievement in psychology. Amer. Psychologist, 1955, 10, 69-71.

Luft, J. Implicit hypotheses and clinical predictions. J. abnorm. soc. Psychol., 1950, 45, 756-760.

Passini, F. T. & Norman, W. T. A universal conception of personality structure? J. Pers. Soc. Psychol. 1966, 4, 44-49

Taft, B. Ability to judge people. Psychol. Bull., 1955, 52, 1-21.

Wedell, C., & Smith, K. U. Consistency of interview methods in appraisal of attitudes. J. applied Psychol., 1951, 35, 392-396.

IV - 6: The Teacher Q-Sort

Alan Rickfelder, Beryl Brown, and John E. Milholland

INTRODUCTION

Studies of teacher effectiveness based on ratings by others (e.g. students, supervisors) suffer from two major defects.

First, most scales require the respondent to rate the teacher on dimensions that are either derived from a theoretical position or from a factor analysis of previous items, but the matter of importance to the rater has been neglected. (Remmers, in Gage, 1963). If the scale is designed to give the teacher feedback, he may then mistakenly assume that it covers the attributes that are important to students or supervisors. For example, a rater might be asked whether or not a teacher dresses appropriately. This may, however, not be an important dimension for him in describing a teacher.

The importance of relevancy to the perceiver is thoroughly discussed in a paper by Hastorff, Richardson and Dornbush (in Tagiuri and Petrullo, 1958). They urge the researcher to "...make more of an attempt to study the perceptual categories that are actually employed by, and thus relevant to, the perceiver under consideration" (p.55).

A second, and closely related, defect in many scales is the failure to require the rater to made judgments of the relative importance, appropriateness or applicability of the various characteristics being rated. Unless forced-choice, or some other suitable technique, is used response biases such as halo effect may reduce the validity of the results. Research with the Semantic Differential, for example, has documented the prevalence of individual and group differences in "scale checking styles" (Osgood, 1957; O'Donovan, 1965).

In order to avoid the first defect, the first step in this study was the eliciting of statements about teachers from a group of 126 Intro ductory Psychology students. A sentence completion form was used because it was felt that this allowed for maximum freedom of responses. Each student was asked to respond five times to each of the following incomplete statements:

A teacher should ______________________________
A teacher should not __________________________
Students expect teachers _______________________

The sentence stems were constructed in this way to cover as many aspects of student perception of teachers as possible. Modern role theory articulates a difference between expectations that are normative and those that are predictive (Biddle, Rosencranz, and Rankin, 1961; Biddle and Thomas, 1966), and we wanted to be certain both kinds were included.

The results of this dimensions-gathering questionnaire are found in Appendix A. We used these dimensions as a check against items from other rating scales to insure the fullest inclusiveness and for reference regarding terminology.

While this technique yielded helpful and interesting results, one shortcoming is also immediately evident; coding restricted responses sometimes requires interpretation. For example, although the initial compilation includes frequent mention of "fairness", this term is not included in the final instrument because we had no way of knowing whether this referred to the impartial assignment of grades, to the reasonableness of demands, or perhaps just willingness to listen to differences of opinion. The specific items just listed were included.

To protect against the second defect mentioned above we chose to use a Q-Sort instrument (Stephenson, 1953). This technique forces the respondent to assign descriptive statements in conformity with a distribution that is approximately normal, thus requiring him to order the items and at the same time reducing the contamination of his idiosyncratic rating behavior. The Q-Sort developed in this study was called the Teacher Q-Sort.

THE TEACHER Q-SORT

The Teacher Q-Sort was intended to combine the Teacher Q-Sort into one device statements which would be representative of what appear to be, on a rational basis, descriptive categories representing what the students feel is important for achievement and satisfaction.

The Development of the Instrument

Following a review of the relevant literature on teacher characteristics and teacher evaluation, and comparison with the dimensions-gathering questionnaire, it was concluded that the statements descriptive of teacher could be assigned to five categories or dimensions: Method, Skill, Personality, Knowledge, and Interpersonal Attributes. These categories represent several of the factors found in previous studies. (Bendig, 1954; Gibb, 1955; McKeachie, 1964). At least twenty-five of the items we used are very similar to some appearing in the factor analysis study by Isaacson *et al* (1964).

Each of the categories was represented by positive statements which were selected from a wide collection reported in the literature. A total of 116 statements (given in Appendix B) were presented twice to each of seven judges (three Professors of Psychology and four graduate students in Psychology at the University of Michigan). On each occasion the judges were asked to assign the items to the categories in which they thought they belonged. The two ratings were done a week apart. The judges were provided with the following descriptions of the categories:

1. Method - *refers to what the teacher does* in his course, and includes such considerations as lecture methods, use of class participation, methods of testing, and kinds of assignments. This category does not refer to how well the teacher does these things, merely what he does.

2. Skill - refers to the teacher's *ability to get his material across*, and includes such considerations as communication skills and sensitivity to conditions which hinder communication as well as an ability to vary teaching methods to increase effectiveness. This category does not refer to the method of communication, nor what is communicated; rather it refers to how well the teacher communicates.

3. Personality - refers to an objective appraisal of what describes the person who is teaching, and includes such considerations as *physical* (health, appearance) *and psychological* (mannerisms, emotional health) *characteristics*. This category does not include considerations of the effects of this kind of personality on individual students, i.e. the subjective experiences derived from association with such a personality. The latter belongs to the last category - Interpersonal Attributes.

4. Knowledge - refers to *what the teacher knows*, and includes such considerations as his stature as an intellectual or academician, what he knows in his own and other fields, and what he knows in either a molar or molecular sense. This category does not refer to how or how well he gets his knowledge across to his students.

5. Interpersonal Attributes - refers to what *effect the teacher has on his students* apart from their learning course content as they would in any course, and includes such considerations as the teacher who serves as a model, satisfies individual needs, or generates interest, participation or involvement on the part of the student.

After the ratings of the items were collected, 15 items were selected for each of the five categories on the basis of judge agreement. The data of judge agreement are presented in Tables 1 and 2. The 75 items were then randomly arranged in a three page questionnaire. The questionnaire, its instructions and data sheets, and scoring system are presented in Appendix C.

The Experimental Study

The primary concern of this pilot study was to try out the Teacher Q-Sort as an instrument for obtaining a student's perception of his ideal teacher, of his present teacher, and the relationship between the two. The sort for the ideal teacher should allow the student to give a differential weighting of importance to the 5 teacher dimensions through his distribution of the 75 items among 9 Q-Sort groups.

Table 1

Number of items and cumulative per cents of judge agreement* for each category

	Total Items		Method Items		Skill Items		Personality Items		Knowledge Items		Interpersonal Items	
	n	cp	n	cp	n	cp	n	cp	n	cp	n	cp
A	34	45%	12	80%	4	27%	10	67%	6	40%	2	13%
B	14	64%	3	100%	5	60%	2	80%	2	53%	2	27%
C	19	89%			6	100%	2	93%	5	87%	6	67%
D	4	95%					1	100%	1	93%	2	80%
E	3	99%							1	100%	2	93%
F	1	100%									1	100%

Table 2

Judge Agreement* on Each Item

1	A	16	D	31	E	46	A	61	E
2	C	17	A	32	A	47	A	62	A
3	B	18	C	33	B	48	A	63	A
4	A	19	B	34	A	49	C	64	A
5	C	20	B	35	A	50	C	65	A
6	B	21	C	36	C	51	B	66	A
7	B	22	A	37	A	52	A	67	A
8	A	23	C	38	C	53	C	68	D
9	A	24	A	39	A	54	B	69	A
10	A	25	B	40	C	55	F	70	A
11	C	26	D	41	C	56	B	71	B
12	A	27	C	42	A	57	C	72	E
13	A	28	B	43	A	58	D	73	A
14	C	29	B	44	C	59	C	74	A
15	C	30	A	45	B	60	A	75	A

* Key:
A - complete agreement and consistency among judges
B - 13 out of 14 judgments in agreement
C - 12 out of 14 judgments in agreement
D - 11 out of 14 judgments in agreement
E - 10 out of 14 judgments in agreement
F - 9 out of 14 judgments in agreement

The correlation between the student's Q-Sort for an ideal teacher and his Q-Sort for a real teacher may be considered an index of the student's general satisfaction with his real teacher. Satisfaction may also be ascertained for each of the five dimensions of the items. Any or all of these factors may be related to student achievement, ability, satisfaction with or effort in a course.

Sample and Procedure

The student sample in this study consisted of 32 male sophomores and juniors at a small, private, liberal arts college in Detroit, Michigan. Their grade-point averages ranged on a 4-point scale from 1.99 to 3.93 with a mean of 2.74. The mean total score of the sample on the School and College Ability Tests (SCAT) was 308.7 with a standard deviation of 11.26.

The students were asked first to complete a Q-Sort description of their ideal teachers and then to use the instrument to describe any four teachers they had had. Two particular teachers were described by all of the subjects. Each student also was told to describe at least one teacher about whom he had very strong feelings, either positive or negative. After completing the Q-Sort on each teacher, the student was asked to fill in the questionnaire in Appendix D, which included a rating of the overall value of the course and the general level of teaching ability in addition to a few other questions.

Results: The Ideal Teacher

The mean and standard deviations of the Q-Sort values of the items in the five categories of the ideal teacher sort are given in Table 3.

Table 3

Mean Q-Sort Values* of Items in the Five Categories of the Ideal Teacher Q-Sort for 32 Students

Category	Mean	Standard Deviation
Method	3.17	.39
Skill	4.55	.37
Personality	4.05	.42
Knowledge	3.93	.47
Interpersonal	4.30	.43

* Values for the items run from 0 to 9, with the mean for all items forced to be 4.00

The constraints imposed by the forced-choice nature of the Q-Sort make the usual simple statistical tests of significance inappropriate, but it does seem clear that this group of students value Skill above Method.

The individual item distributions for these students indicate that their ideal teachers enjoy teaching, are enthusiastic about their subjects, present material in an interesting way, clearly state what they mean, are mature, and sensitive to their class's reactions. Although the subjects in this part of the study were drawn from an entirely different college population, the agreement with the results of the initial open-ended survey is quite close.

Characteristics considered least important in an ideal teacher are: reading from a text in class, dressing appropriately, publishing articles and books, including class participation as part of grading, being a good entertainer. Also described as unimportant are specific methods of assessment.

The students appear to have a fairly consistent picture of the attributes that make up an ideal teacher. They stress the quality of the teacher's behavior rather than any specific method. A contrast of the items judged most and least applicable is given in Table 4. Of the twenty-five items judged most characteristic of an ideal teacher, nine came from the Skill category, seven from the Interpersonal, five from the Personality, four from Knowledge, and none from the Method area.

Of the twenty-five least characteristic items, none is a Skill item. Twelve of the fifteen Method items fall here, together with five Personality, four Knowledge, and four Interpersonal items.

The data for the ideal teacher sort were also analyzed separately for the eight students in the highest and the lowest quarters of the distribution of SCAT scores to see if there were any differences. Table 5 presents the results of this analysis.

Both groups agreed in giving the highest rating to the Skill category and the lowest to the Method category with the sharpest contrast appearing in the low group. The high group seemed to make little distinction among the three other categories, but the low group valued Interpersonal attributes above Knowledge or Personality. This may mean that students in the high group are generally more competent and self-sufficient than those in the low group.

For each student a mean Q-Sort value for the items in each category was computed and the five sets of means thus obtained intercorrelated. The correlations appear in Table 6.

For an N of 32 an r of .35 is required for significance at the .05 level, but, again, the forced choice situation, which would generate negative correlation, makes interpretation of significance in the usual sense impossible. The coefficients seem to cluster into three groups, however. The lone positive correlation occurs between Personality and Interpersonal Attributes; the negative values relate these two characteristics to Method, Skill, and Knowledge; and Knowledge, Method, and Skill have essentially zero inter correlations. This pattern of

Table 4

Items Ranked Most and Least Characteristic of Ideal Teachers

Category	Most Characteristic	Least Characteristic
Method	(None)	Objective exams vs Essay exams Frequent quizzes vs 1 or 2 exams Term papers Grading on curve Lecturer following outline Reading from text in class Reasonable amount of outside work Using variety of methods Letting student decide what extra work to do
Skill	Gearing material to a particular class Illustrating with examples Rephrasing to clarify Stating clearly Explain how material fits together Vary presentations Material well organized Presenting in interesting way Clarify ambiguous questions	(None)
Personality	Friendly Enthusiastic Enjoys teaching Tolerates disagreement Mature and well adjusted	High moral standards Appropriate dress Being religious Free of distracting mannerisms Good entertainer
Knowledge	Can make isolated facts fit into a whole Scholar, continually seeking new knowledge Knowledge exceeds texts Up-to-date on contemporary issues	Knowing historical development of field Able to answer all questions Great recall of facts Published
Interpersonal	Instills confidence in student Can go to outside class Inspires student to continue academic pursuits Knows more about student than name Student more mature as result Generates excitement Student better student as result	Student finds it profitable to follow all leads Student wants to be like teacher Student helped to deal with own inadequacies Student would like teacher as counselor

Table 5

Mean Item Scores for Categories of the Ideal Teacher Sort by Students in the Highest and Lowest Quarters of the SCAT Score Distribution

Category	Highest Quarter Mean Score	Rank	Lowest Quarter Mean Score	Rank
Method	3.26	5	3.00	5
Skill	4.44	1	4.64	1
Personality	3.98	4	4.03	3
Knowledge	4.18	2	3.93	4
Interpersonal	4.14	3	4.39	2

Table 6

Intercorrelations of the Student Mean Q-Sort Values for Items in the Five Categories of Teacher Behavior in the Ideal Teacher Sort

Category	Skill	Personality	Knowledge	Interpersonal
Method	-.02	-.31	-.03	-.57
Skill		-.47	-.08	-.29
Personality			-.54	.29
Knowledge				-.47

relations suggests a dichotomy consisting of one group of students who value cognitive attributes and another who value affective attributes. The dichotomy, if it exists, might be related to grades, which correlated .34 with the Knowledge mean and -.23 with the mean values for Interpersonal Attributes items.

Comparison of Ideal and Real Q-Sort

The Q-Sort instrument can also provide a measure of the student's satisfaction with his teacher by means of correlation coefficient between item scores from the student's description of his ideal teacher and his description of his real teacher in a particular course. We assume that the higher correlations indicate more satisfaction and found that these correlations correlated .60 with a global assessment made by the student of his teacher's all-round teaching ability. The plot of the Q-Sort correlations against the rating was linear.

Distributions of real-ideal correlations for three teachers are shown in Table 7. The range is considerable in each case, and exemplifies the usual circumstance of student reaction to a teacher. There are nevertheless some between-teacher differences which must be accorded some validity in view of the fact that practically the same group of students were making the judgments of all three teachers. The first teacher seems to correspond most closely to the ideal for the most students, yet a few of the correlations for the other two teachers exceeded the median for the first.

Table 7

Frequency Distribution of Real-Ideal Teacher Correlations for Three Different Teachers

Correlation	Teachers 1	2	3
.60 - .69	3		
.50 - .59	2		
.40 - .49	3	2	1
.30 - .39	12	1	
.20 - .29	5	2	2
.10 - .19	3	6	2
.00 - .09	3	6	4
-.10 - -.01	1	7	8
-.20 - -.11		5	5
-.30 - -.21		2	
N =	32	31	23
Range =	-.09 to .69	-.27 to .49	-.16 to .43
Mdn =	.33	.06	-.03

The assignment of the 75 items to five categories of teacher behavior made it possible to inspect the dimensions on which well and poorly satisfied students found their teachers to be most divergent from their ideals. A measure of this discrepancy was obtained by subtracting the mean Q-Sort value for the items in a category for the ideal teacher sort from the mean for that category in the actual teacher sort. A negative value would indicate that the items in that category were less characteristic of the real than of the ideal teacher; a positive value that the items were more descriptive of the real teacher. The means and standard deviations of the discrepancies compiled in this fashion are given in Table 8, for students in roughly the highest and lowest quarters of the distribution of real-ideal correlations for the three teachers appearing in Table 7.

Table 8

Category Mean Item Scores for Three Actual Teachers
Minus Category Means for Ideal Teachers for Students with the
Highest and the Lowest Real-Ideal Correlations

Category	Teacher No. 1				Teacher No. 2				Teacher No. 3			
	High Group		Low Group		High Group		Low Group		High Group		Low Group	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Method	.03	.43	-.32	.63	.03	.40	-.69	.74	-.16	.25	-.88	.65
Skill	.17	.34	.35	.22	.75	.27	.67	.38	.08	.63	.09	.53
Personality	-.07	.23	-.33	.45	-.13	.44	-.06	.72	-.83	.70	-.91	.46
Knowledge	-.40	.36	-.03	.59	-.98	.55	-.79	.73	-.11	.65	.25	.63
Interpersonal	.27	.36	.33	.61	.37	.25	.87	.80	1.01	.53	1.44	.67
N	8		8		8		8		5		5	

It would be expected that Teacher No. 1, with the highest median real-ideal correlation, would exhibit smaller discrepancies than the other two, and this is indeed the case. There is a tendency for the students of this teacher who consider him most like their ideal to see him falling below their ideal in Knowledge whereas the students with low correlations do not. The latter groups express more dissatisfaction in the Personality and Method categories. Both groups see the Interpersonal Attributes items as more characteristic of this teacher than of their ideals.

When these same students, with the same ideal teachers, come to look at the other two teachers they make quite different evaluations. Teacher No. 2 is seen as having more Skill and less Knowledge than the ideal by both high and low correlating students, but the high group seems better satisfied with his Method than the low group. This same contrast appears for Teacher No. 3, but both groups of students see him characterized quite a bit more by Interpersonal attributes and less by Personality items than their ideal.

Relations with Course Grades

An attempt was also made to see if the student real-ideal correlations were related to achievement in the courses. The r between this measure of student satisfaction and the grade in the course was only .13. This kind of result has also been reported in previous studies by Remmers (1930), Elliott, (1950), and Bendig, (1953).

Generally speaking, then, the 32 subjects in this sample did not show much tendency to achieve more when they were more satisfied with the teacher. It was decided, however, to compare students at the extremes in achievement with respect to their satisfaction with the teacher. For Teacher No 1 the sample of 32 subjects was divided into four quarters according to their grades in the course, and the first and fourth quarters compared. The mean correlation for the upper quarter was .34, and for the lower quarter it was .32, but in the upper group the range was .25 to .50 whereas for the lower group it was .05 to .63.

Comparisons between the two groups' reactions to items in each of the five dimensions of teacher behavior were also made. The differences for the students in the highest and lowest quarters of the grade distribution are shown in Table 9. The mean discrepancies are all less than half an interval in the 9-point Q-Sort scale, and thus it would appear that this teacher was not too far from the ideals of these two groups of students. Two points should be borne in mind however. One is that the Q-Sorts consisted of relative judgments, i.e. the items were assigned their values on the basis of whether they were more or less like the ideal or real teacher than other items. This means that a student might judge that skill in summarizing class discussion (Item 1 of the Teacher Q-Sort) is more characteristic of both the ideal and the real teacher than making the student feel important (Item 2) yet be very dissatisfied with his real teacher in both respects. The only information the comparison of real and ideal sorts yields is whether the pattern of relationships among the categories is the same. Discrepancies such as those in Table 9 serve only to show how well the shape, not the elevation, of the profile of the real teacher conforms to that of the ideal teachers.

Table 9

Discrepancies Between Mean Q-Sort Values for the Five Categories for Students in the Highest and Lowest Quarters of the Grade Distribution in the Course of Teacher No. 1

Category	Real Mean Minus Ideal Mean Highest Quarter	 Lowest Quarter
Method	.32	.31
Skill	-.42	-.28
Personality	.40	.14
Knowledge	.14	.32
Interpersonal	-.44	-.48

The second point to note is that individual differences among students are masked by the averaging. Obviously the average discrepancy, for an individual or a group, has to be zero by virtue of the Q-Sort scoring. Individual variation in a category, however, might be wide, but in opposite directions for different students.

In spite of these limitations it seems fair to say that both high and low achieving students on the average perceived their teacher in this course to be relatively higher in Method and lower in Skill and Interpersonal attributes than their ideals. The high group seem to indicate that they could make do with less Personality whereas the low group would be satisfied with less Knowledge. This characterization seems to be consistent with the Cognitive-Affective dichotomy suggested in the discussion of the correlations presented in Table 6, and indicates that the better students lean toward the cognitive side.

Summary and Evaluation

This paper has described the construction of a Teacher Q-Sort consisting of 15 items for each of the five categories of teacher behavior: Method, Skill, Personality, Knowledge, and Interpersonal Attributes. It was tried out with a sample of 32 college students who were asked to make sorts for their ideal teachers and for four of their actual teachers.

The average item score for a category in the ideal teacher sort can be regarded as a measure of the relative importance a student attaches to that category, and these students clearly valued Skill above Method. When category mean scores were intercorrelated a Cognitive-Affective dichotomy of student preferences seemed to be suggested.

The correlation between the ideal sort and a sort for a particular teacher may be taken as an index of a student's satisfaction with that teacher. This measure correlated .60 with the students' global ratings of a teachers effectiveness and showed differences among teachers. The correlation of the correlations with course grades was only .13.

The Teacher Q-Sort seems to have possibilities for serving the following purposes:

1. Ascertaining the kind of teacher behaviors students consider most and least important.
2. Measuring a student's satisfaction with his teacher.
3. Discovering areas of behavior in which teachers diverge from what their students would like them to be.

Research with the Teacher Q-Sort could be directed toward discovering what kinds of attributes different kinds of students prefer in teachers and how teachers are perceived to differ in them.

BIBLIOGRAPHY

Barr, A. S., and Emana, L. M. What qualities are prerequisite to success in teaching? The Nation's Schools, 1930, 6, 60-64.

Baxter, Bernice. Teacher-Pupil Relationships. New York: Macmillan, 1941.

Bendig, A. W. Relation of level of course achievement to students' instructor and course ratings in introductory psychology. J. Educ. Psych., 1953, 13, 437-449.

____________ A factor analysis of student ratings of psychology instructors on the Purdue Scale. J. Educ. Psych., 1954, 45, 385-392.

Biddle, B. J., Rosencranz, H. A. and Rankin, E. F. Studies in the Role of the Public School Teacher. Columbia, Mo.: Univ. of Missouri Press, 1961.

Biddle, B. J. and Thomas, E. J. Role Theory: Concepts and Research. New York: Wiley and Sons, 1966.

Bird, G. E. Pupil estimates of teachers. J. Educ. Psych., 1917, 8, 35-40.

Bryan, R. C. Pupil ratings of secondary school teachers. School Review, 1938, 45, 357-367.

Coffman, W. E. Determining students' concepts of effective teaching from their ratings of instructors. J. Educ. Psych., 1954, 45, 227-238.

Cohen, J. An aid in the computation of correlations based on Q-Sorts. Psych. Bull., 57, 138-139.

Domas, S. J. and Tiedeman, D. V. Teacher competence: an annoted bibliography. J. Exper. Educ., 1950, 19, 101-118.

Elliott, D. N. Characteristics and relationships of various criteria of college and university teaching. Purdue Univ. Student Higher Education, 1950, 70, 5-61.

Englehart, M. D. and Tucker, L. R. Traits related to good and poor teachers. School Review, 1936, 4, 28-33.

Gage, N. L. (Ed.) Handbook of Research on Teaching. Chicago: Rand McNally, 1963.

Gibb, C. A. Classroom behavior of the college teacher. Educ. Psych. Measurement, 1955, 15, 254-263.

Gross, N., Mason, and McEachern. Explorations in Role Analysis: Studies of the School Supt. Role. New York: Wiley, 1958.

Horn, J. L. and Morrison, W. L. Dimensions of teacher attributes. J. of Educ. Psych., 1965, 56, 118-125.

Isaacson, R. L., McKeachie, W. J., and Milholland, J. E. Correlation of teacher personality variables and student ratings. J. of Educ. Psych., 1963, 54, 110-117.

Isaacson, R. L., McKeachie, W. J., Milholland, J. E., Lin, Y. G., Hofeller, M., Baerwaldt, J. W., and Zinn, K. L. Dimensions of student evaluations of teaching. J. of Educ. Psych., 1964, 55, 344-351.

Jersild, A. I. Characteristics of teachers who are "liked" best and "disliked most." J. Exper. Educ., 1940, 2, 139-151.

McKeachie, W. J. and Solomon, R. Student ratings of instructors: a validity study. J. Educ. Research, 1958, 51, 379-382.

McKeachie, W. J. The appraisal of Teaching in Large Universities. Ann Arbor, Mich.: University of Michigan, 1959.

McKeachie, W. J., Lin, Y. G., Milholland, J. E. and Isaacson, R. L. Student affiliation motives, teacher warmth, and academic achievement. Journal of Personality and Social Psychology, 1966, 4, 457-461.

Mead, A. R. The qualities of merit in good and poor teachers. J. Educ. Research, 1929, 20, 239-259.

Michael, W. B., Herrold, E. E. and Cryon, E. W. Survey of student-teacher relationships. J. Educ. Research, 1951, 44, 657-673.

O'Donovan, D. Rating extremity: pathology or meaningfulness. Psych. Review, 1965, 72, 358-372.

Osgood, C. E., Suci, C. J., and Tannenbaum, P. H. The Measurement of Meaning. Urbana: Univ. of Illinois Press, 1957.

Remmers, H. H. To what extent do grades influence student ratings of instructors? J. Educ. Research, 1930, 21, 314-316.

Riley, J. W., Ryan, B. F., and Lifshitz. The Student Looks at His Teacher. New Brunswick, N.J.: Rutgers Univ. Press, 1950

Ryans, D. G. Some correlates of teacher behavior. Educ. Psych. Measurement, 1959, 19, 3-12.

Ryans, D. G. The investigation of teacher characteristics. *Educ. Research*, 1953, *34*, 371-396.

———. *Characteristics of Teachers: Their Description, Comparison, and Appraisal*. Washington, D. C.: American Council on Education, 1960.

———. Assessment of teacher behavior and instruction. *Rev. Educ. Research*, 1963, *33*, 415-441.

Sprinthall, N. A., Whitely, J. M., and Moser, R. L. A study of teacher effectiveness. *Journel of Teacher Educ.*, 1966, *17*, 93-106.

Stephenson, W. *The study of behavior.* Chicago: Univ. of Chicago Press, 1953.

Stewart, C. T. and Malpross, L. F. Estimates of achievement and ratings of instructors. *J. of Educ. Research*, 1966, *59*, 347-350.

Tagiuiri, R. and Petrullo, L. (Eds.) *Person Perception and Interpersonal Behavior.* Stanford: Stanford Univ. Press, 1958.

Voeks, V. W. and French, G. M. Are student ratings of teachers affected by grades? *J. Higher Educ.*, 1960, *31*, 330-334.

Weaver, C. H. Instructor rating by college students. *J. Educ. Psych.*, 1960, *51*, 21-25.

Witty, Paul An analysis of the personality traits of the effective teacher. *J. Educ. Research*, 1947, *40*, 662-671.

APPENDICES

A. Results of Student Expectations Questionnaire

B. Statements Submitted to Judges to be Classified into the Five Dimensions of Teacher Behavior

C. Teacher Q-Sort, Instructions, and Scoring System

D. Student Evaluation and Report Form

A. RESULTS OF STUDENT EXPECTATIONS QUESTIONNAIRE

Sample: 126 students enrolled in six different classes of Introductory Psychology (Univ. of Michigan, 1966) 57 males, 69 females.

Students were asked to respond five times to each sentence stem. The numbers following each category indicate the number of first, second, third, fourth and fifth choices that make up the total count.

"Students expect a teacher ____________"	Number of Choices					
	1st	2nd	3rd	4th	5th	Total
1. To be enthusiastic about teaching, be interesting, show interest in his subject	18	15	5	7	5	50
2. Have thorough knowledge of subject, be up-to-date, know what they're talking about	18	7	6	4	7	42
3. Present well prepared lectures, be prepared, be systematic and organized	13	10	4	8	5	40
4. Be friendly, take personal interest in students, like students, learn names	6	7	9	8	5	35
5. Be fair, fair exams, fair grades, no favorites	8	4	11	4	4	31
6. Be helpful, willing to give help	3	9	7	8	2	29
7. Be able to communicate well, clear presentations	6	9	5	3	3	26
8. Be tolerant of student ideas, encourage questions, respect student opinion						21
9. Be on time, come to class	6	3	3	3	3	18
10. Have control of class, keep on the subject, maintain discipline	2	4	4	3	4	17
11. Make class exciting, teach stimulatingly, hold attention	4	6	3	3	0	16
12. Make students learn	3	6	1	2	1	13
13. Reasonable tests, assignments	2	1	2	3	7	15

"Students expect a teacher ____________"

	"Students expect a teacher"	Number of Choices					
		1st	2nd	3rd	4th	5th	Total
14.	Be understanding, sympathetic, accept reasonable excuses	4	3	2	4	1	14
15.	Answer questions	3	3	2	1	1	10
16.	Have a sense of humor	1	2	2	1	4	10
17.	Care how course goes, how students do, realize students capacities	2	1	2	4	1	10
18.	Be courteous, pleasant, polite	3	4	0	1	1	9
19.	Explain every phase of the course	1	0	4	0	2	7
20.	Be neat, good appearance	0	1	1	2	4	8

"A teacher should not ________________"	Number of Choices					
	1st	2nd	3rd	4th	5th	Total
1. Ignore student opinion, brush aside questions, evade issues, press his own ideas	19	20	15	2	10	66
2. Be impersonal, alienate self from students, be formal, be without feelings	8	6	7	10	4	35
3. Assign more homework than reasonable, busy work, expect more time in his course than any other	6	7	4	11	3	31
4. Have favorites, be susceptible to apple polishers	6	12	4	4	3	29
5. Be boring, dull, talk in monotone	8	7	8	1	2	26
6. Display emotions (nervous, shy, angry, yell, foul language)	6	4	2	2	5	19
7. Embarass students in class, be overly critical, make big issues out of small	10	7	2	2	0	21
8. Be unprepared	5	4	2	1	0	12
9. Allow students to run class, allow class to get behind	4	3	2	1	1	11
10. Make course too simple, teach down	5	1	3	0	0	9
11. Make course too complex, too hard	1	3	1	1	2	8
12. Be overly friendly, act "hip"	2	4	0	1	1	8
13. Show off how smart he is, try to prove how hard he is	0	3	1	2	2	8
14. Lecture continuously, read or follow book	4	1	1	0	1	7

Not coded: 35 responses; too radical, talk during exams, assume prior background, keep class overtime, be a tyrant nor be threatened by students, be neither fast nor slow

"A teacher should ________________"	Number of Choices					
	1st	2nd	3rd	4th	5th	Total
1. Like his job, like teaching, be enthusiastic, excited about his subject	10	9	8	5	5	37
2. Make class interesting, make class enjoyable	5	15	7	3	2	32
3. Be knowledgeable, know the subject, be competent, well read	11	8	6	4	4	33
4. Be fair, impartial, unbiased	5	5	6	5	7	28
5. Be available after class, be interested in students outside class, want personal contact	7	7	4	4	2	24
6. Be willing to help students, be helpful	6	5	3	7	2	23
7. Be open-minded, respect student opinion, open to opposing ideas	7	7	3	4	1	22
8. Be prepared	4	3	7	4	3	21
9. Stimulate, inspire, excite, challenge, motivate students	5	1	6	1	7	20
10. Promote discussion, encourage questions, require class participation	4	3	5	4	1	17
11. Make goals explicit, cover what he expects students to know, announce tests	2	3	3	6	2	16
12. Be reasonable, realize students have other courses, not expect miracles	3	3	5	5	0	16
13. Present clearly and well, speak understandably, speak clearly	6	4	4	1	1	16
14. Maintain poise, have confidence, demand and gain respect	1	3	3	4	3	14
15. Be friendly, be a friend	4	5	2	1	2	14
16. Learn names, know students as individuals	4	2	0	4	3	13
17. Be understanding, kind, sympathetic, considerate	5	3	2	2	2	14

"A teacher should ________________"	Number of Choices					
	1st	2nd	3rd	4th	5th	Total
18. Show leadership, live up to title, act age.	3	5	2	2	2	13
19. Teach the subject, discuss in detail, stick to the subject	3	2	1	3	1	10
20. Be sensitive to needs and feelings of students	0	2	3	2	2	9
21. Be patient	1	0	4	3	0	8
22. Give examples, add his opinion to texts, refer to outside sources						8
23. Be prompt, on time for class						7
24. Be relaxed, casual, at ease	3	0	0	1	3	7
25. Be willing to change patterns, vary methods, flexible	0	1	0	2	3	6
26. Be organized	1	0	3	1	0	5
27. Maintain control of class, be the authority	2	2	0	1	0	5
28. Be tactful, polite	2	1	2	0	0	5
29. Be sincere, be himself	2	1	2	0	0	5
30. Be well dressed	2	2	0	0	1	5

B. STATEMENTS SUBMITTED TO JUDGES TO BE CLASSIFIED INTO THE FIVE DIMENSIONS OF TEACHER BEHAVIOR

1. The teacher is enthusiastic about his subject.
2. The teacher makes students feel important.
3. The teacher maintains control of the class, keeps students on the topic.
4. The teacher clearly states what he means.
5. The teacher lectures from notes.
6. The teacher has a great recall of facts and information.
7. The teacher is well versed in the research findings of his field.
8. The teacher motivates students to work hard.
9. The teacher is able to answer all of the questions asked in class.
10. The teacher lets students decide what to discuss in class.
11. The teacher has published books or articles in his field.
12. The teacher is relaxed and casual.
13. The teacher has high moral standards.
14. The teacher has a good speaking voice.
15. The teacher knows how to make an important point emphatic.
16. The teacher knows my name.
17. The teacher respects student opinion on controversial issues.
18. The teacher is an expert in his field.
19. The teacher gives frequent quizzes.
20. The teacher includes class recitation as part of the grade.
21. The teacher is dynamic and outgoing.
22. The teacher has his material well organized.
23. I would like to have this teacher as a counselor.
24. The teacher's course requirements are specific enough that I can judge for myself how well I am doing.
25. The teacher knows a great deal about the historical development of his field.
26. The teacher is systematic and well organized.
27. The teacher lectures, following an outline which he gives to the class.
28. The teacher grades on a curve.
29. The teacher knows more about me than my name and test grades.
30. The teacher knows how to illustrate his point with examples.
31. The teacher always seems to sense how his material is going over and can vary his presentations accordingly.
32. The teacher is understanding, considerate of student feelings.
33. The teacher instills confidence in class.
34. The teacher generates enough excitement to get me involved in the class.
35. The teacher can help clarify ambiguous student questions.
36. The teacher dresses appropriately.
37. The teacher is sensitive to feeling of the class on group issues.
38. The teacher constructs exams which appropriately test the material covered.
39. The teacher assigns a term paper.
40. The teacher invites questions from students.
41. The teacher is up-to-date on contemporary issues in his field.
42. The teacher can discuss topics in detail.
43. The teacher hands back and discusses exams.
44. The teacher makes students feel comfortable in class.
45. The teacher cares whether or not students learn.

46. The teacher is able to turn classroom difficulties into meaningful learning experiences.
47. The teacher is a good entertainer.
48. The teacher allows for individual needs and interests in his assignments.
49. The teacher is a responsible citizen, is well informed on civic issues.
50. The teacher reads from other sources to elucidate a point in class.
51. The teacher is able to make meaningful connections between his field and others.
52. The teacher assigns pertinent outside readings.
53. The teacher helps me deal with my own inadequacies.
54. The teacher inspires students to continue academic pursuits.
55. The teacher is able to add new insights to "old" ideas.
56. The teacher can relate his material to experiences the students have had.
57. The teacher is the kind of person you feel you can go to outside of class.
58. The teacher can rephrase his explanations to clarify his point.
59. The teacher obviously enjoys teaching.
60. Because of my experience with this teacher, I want to take more courses in his field.
61. The teacher announces tests in advance.
62. The teacher can refer students to good sources of information for extended study.
63. The teacher gives objective (multiple-choice, true-false) exams.
64. The teacher gives essay exams.
65. The teacher is helpful to individual students.
66. The teacher makes his goals explicit.
67. The teacher has a sense of humor.
68. The teacher can explain how topics fit together.
69. I have become a more mature person as the result of my experience with this teacher.
70. The teacher is obviously prepared for every class.
71. The teacher uses audio-visual aids.
72. The teacher is friendly.
73. The teacher grades impartially.
74. The teacher creates a favorable set for learning.
75. The teacher knows principles which are good for practical application.
76. The teacher makes individual projects an important part of the learning experience.
77. The teacher gets personally involved with his students.
78. The teacher can tolerate disagreement.
79. The teacher has a knack for making learning enjoyable and exciting.
80. The teacher's knowledge of the subject exceeds the material in the text.
81. The teacher experiments with various techniques to improve his class.
82. The teacher is tactful and polite.
83. The teacher comes across as a person with feelings and needs the same as anyone else in the classroom.
84. The teacher is skillful in gearing his material to the particular class he is teaching.
85. The teacher obviously knows more about his subject than anyone else in the class.
86. The teacher is religious.
87. The teacher does not get overly involved with students' feelings.
88. The teacher is skillful in leading class discussions.
89. The teacher's reaction to student comments encouraged students to participate even more in class discussions.
90. The teacher's knowledge of the field makes isolated facts fit into organized wholes.

91. The teacher is a scholar; well educated but continually seeking new knowledge.
92. The teacher lets students decide what extra work they can do for the course.
93. The teacher obviously knows more about his subject than he can pack into one course.
94. The teacher is the kind of person I'd like to be.
95. The teacher reviews material before exams.
96. The teacher has no distracting mannerisms (i.e. pacing, throat-clearing, etc.)
97. The teacher uses a variety of methods in his class.
98. The teacher states explicitly what he expects of students.
99. The teacher is mature and well-adjusted.
100. As the result of my experience with this teacher, I have become a better student.
101. The teacher's vocabulary isn't so far above students that they don't understand him.
102. The teacher directs his gaze to class members.
103. The teacher is skillful in summarizing class discussion.
104. The teacher can give some information on almost any topic in his field.
105. The teacher is even tempered.
106. The teacher provides for class discussion.
107. I find it profitable to follow any leads the teacher suggests.
108. The teacher gives only one or two exams.
109. The teacher reads from the textbook in class.
110. The teacher maintains good order in the classroom.
111. The teacher provides information on class norms as well as individual scores.
112. The teacher knows objective criteria for evaluation of achievement in his course.
113. The teacher makes effective use of learning aids.
114. The teacher tells students when they have done a particularly good job.
115. The teacher assigned a reasonable amount of outside work.
116. The teacher presents his material in an interesting way.

C. THE TEACHER Q-SORT

Instructions

You have just been handed three sheets of paper which together contain 75 statements which might be descriptive of an ideal teacher. It is suggested that you read through the entire series to acquaint yourself with the items. After you have done this, go through the entire list, separating the items by marking a ✓ in the + column next to the items you feel are most like your ideal teacher - the kind of teacher you would most like to have. Place a ✓ in the - column next to the items that are least important for an ideal teacher, and a ✓ in the 0 column next to those which seem neutral or which do not seem to pertain.

After you have done this, you are ready to divide the statements into nine different groups, ranging from most descriptive of an ideal teacher to least descriptive of this teacher. Please note, however, that you can put only a certain number of items in each group. (See the record sheet on which you will be recording your final tabulation.)

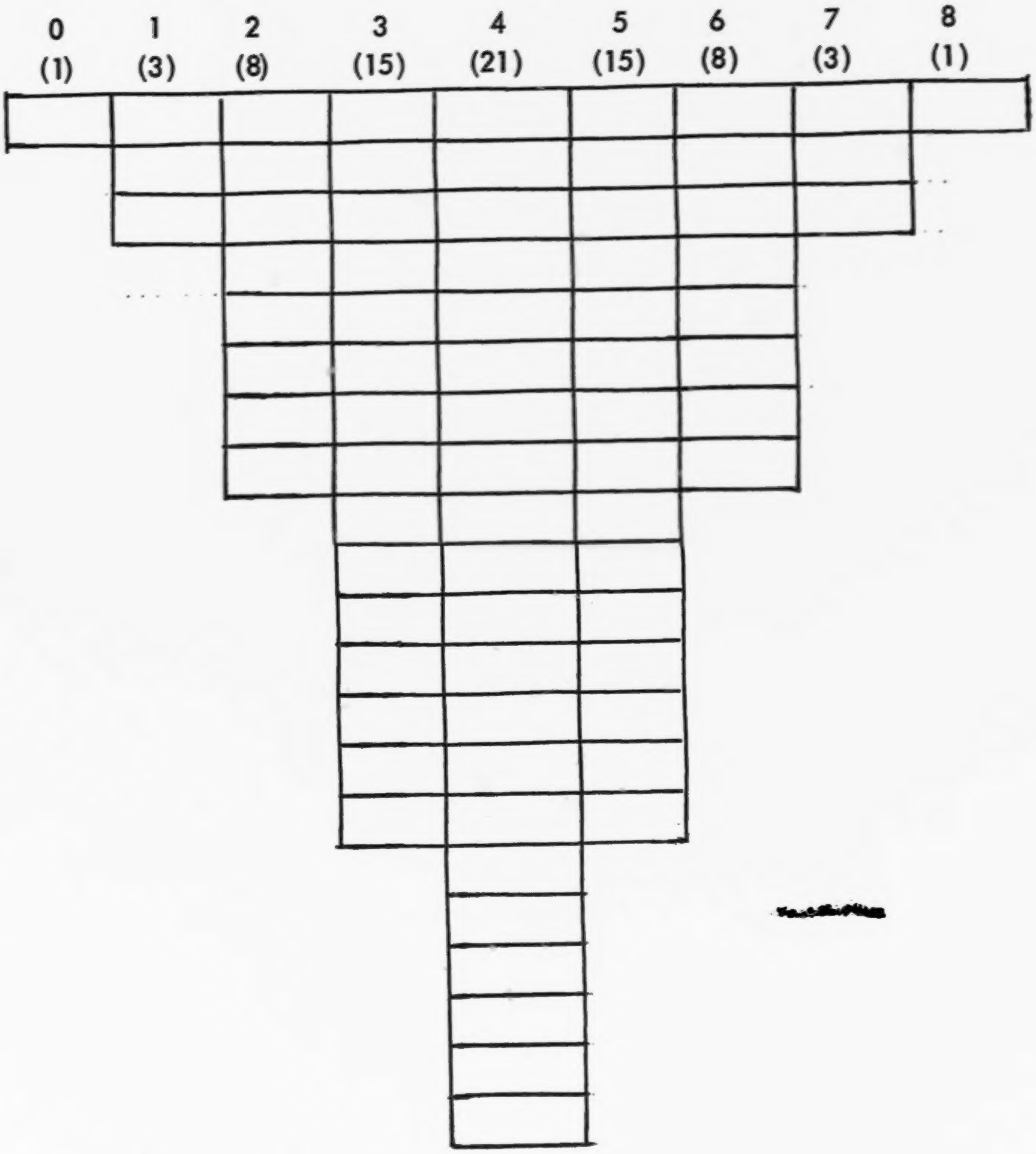
In columns 0 and 8 you may place only one statement, that which best describes the ideal teacher (column 8) and that which least describes the ideal teacher (column 0). In columns 7 and 1 you may put three statements; the next three statements that best describe the ideal teacher (column 7) and the next three statements that describe him least (column 1). In both columns 6 and 2 you place eight statements, in both 5 and 3 you put fifteen, and in column 4 you place twenty-one statements.

You may find it easiest to work directly on the work sheet before filling in the triangular record sheet.

A Reminder: as you do your initial checking, keep in mind the fact that this distribution forces you to separate the statements into equal numbers of least and most like.

Your Name ______________________________

The Teacher you are describing ______________________________


0
(1)
1
(3)
2
(8)
3
(15)
4
(21)
5
(15)
6
(8)
7
(3)
8
(1)

	+	-	0	col.
1. The teacher is skillful in summarizing class discussion.				
2. The teacher makes students feel important.				
3. The teacher instills confidence in students.				
4. The teacher hands back and discusses exams.				
5. The teacher can help clarify ambiguous questions.				
6. The teacher comes across as a person with feelings and needs the same as anyone else in the classroom.				
7. The teacher's vocabulary isn't so far above that they don't understand him.				
8. The teacher gives objective (Multiple Choice, True - False) exams.				
9. The teacher is friendly.				
10. The teacher assigns a reasonable amount of outside work.				
11. The teacher is enthusiastic about his subject.				
12. The teacher is skillful in gearing his material to the particular class he is teaching.				
13. The teacher knows a great deal about the historical development of his field.				
14. Because of my experience with this teacher, I want to take more courses in his field.				
15. The teacher is the kind of person you feel you can go to outside of class.				
16. I find it profitable to follow any leads the teacher suggests.				
17. The teacher includes class recitation as part of the grade.				
18. The teacher's knowledge of the field makes isolated facts fit into organized wholes.				
19. The teacher lectures following an outline which he gives to the class.				
20. The teacher is an expert in his field.				
21. As the result of my experience with this teacher, I have become a better student.				
22. The teacher obviously knows more about his subject than anyone else in the classroom.				
23. The teacher knows how to illustrate his point with examples.				
24. The teacher dresses appropriately.				
25. The teacher uses a variety of methods in his class.				
26. The teacher is the kind of person I'd like to be.				
27. The teacher is able to answer all the questions asked in class.				

	+	-	0	col.
28. The teacher is relaxed and casual.				
29. The teacher is able to turn class difficulties into meaningful learning experiences.				
30. The teacher has high moral standards.				
31. The teacher is a scholar; well educated but continually seeking new knowledge.				
32. The teacher obviously knows more about his subject than he can pack into one course.				
33. The teacher inspires students to continue academic pursuits.				
34. The teacher obviously enjoys teaching.				
35. The teacher has a sense of humor.				
36. The teacher can rephrase his explanations to clarify his point.				
37. The teacher announces his tests in advance.				
38. The teacher has a great recall of facts and information.				
39. The teacher is dynamic and outgoing.				
40. The teacher has published books or articles in his field.				
41. The teacher clearly states what he means.				
42. The teacher's knowledge of the subject exceeds the material in the text.				
43. The teacher is up-to-date on the contemporary issues in his field.				
44. The teacher can explain how topics fit together.				
45. The teacher always seems to sense how his material is going over and can vary his presentations accordingly.				
46. The teacher helps me deal with my own inadequacies.				
47. The teacher is religious.				
48. The teacher gives frequent quizzes.				
49. I would like to have this teacher as a counselor.				
50. The teacher can refer students to good sources of information for extended study.				
51. The teacher is well versed in the research findings of his field.				
52. The teacher knows how to make an important point emphatic.				
53. The teacher has his material well organized, it's easy to follow his presentations.				
54. The teacher presents his material in an interesting way.				
55. I feel the teacher knows more about me than my name and test grades.				

	+	-	0	col.
56. The teacher can relate his material to experiences the students have had.				
57. The teacher has no distracting mannerisms (e.g. pacing, coughing, etc.)				
58. The teacher knows principles which are good for practical application.				
59. I have become a more mature person as the result of my experience with this teacher.				
60. The teacher can give me some information on almost any topic in his field.				
61. The teacher generates enough excitement to get me involved in the class.				
62. The teacher can tolerate disagreement.				
63. The teacher assigns a term paper.				
64. The teacher is skillful in leading class discussions.				
65. The teacher gives only one or two exams.				
66. The teacher grades on a curve.				
67. The teacher reads from the text in class.				
68. The teacher is a good entertainer.				
69. I was more eager to contribute my ideas in class discussion because of the teacher's apparent respect for and interest in my ideas.				
70. The teacher is tactful and polite.				
71. The teacher gives essay exams.				
72. The teacher makes students feel comfortable in the class.				
73. The teacher lets students decide what extra work they can do for the course.				
74. The teacher is mature and well adjusted.				
75. The teacher provides for class discussion.				

The Scoring System

There are several scores that may be derived from the Teacher Q-Sort:

1. The Real-Ideal Teacher Correlation

   a. The subject sorts the 75 items into a quasi-normal distribution by placing specified numbers of items at various positions along the distribution. The number of items required for each position on the distribution is as follows:

Position:	0	1	2	3	4	5	6	7	8
Items:	1	3	8	15	21	15	8	3	1

   b. The position in the distribution also designates the score that an item receives when it is placed there by the subject. This scoring allows a weighting to be determined for any one item or group of items. The statements or items placed at the "0" end of the distribution are those that are least like the teacher. The statements placed at the "8" end of the distribution are those that are most like the teacher.

   c. Since the subject sorts the same 75 items for his real as well as his ideal teacher, it is possible to obtain a correlation between item scores in the two sortings.

   d. Since all of the Q-sorts are based on the same distribution, a nomograph for the estimation of *r* constructed in accordance with the procedure described by Cohen (1957) was used.

   e. This real-ideal correlation can be considered a measure of the student's satisfaction with his real teacher (i.e., how the student's real teacher compares with his ideal teacher). It may also be interpreted as an index of a student's esteem of his teacher, analogous to the self-esteem index derived from a real-ideal self sort as described in clinical literature.

2. The Weighting of the Method, Personality, Skill, Knowledge, and Interpersonal categories

   a. In the Ideal sort the subject sorts the 75 items in accordance with their importance to him, presumably. In the Real sort, he is expected to allocate them on the basis of how accurately they describe an actual teacher.

3. Real-Ideal Category Discrepancy Scores

   a. The score of any one category for a real teacher can be subtracted from the score of the same category for the ideal teacher. The less the real teacher is like the ideal teacher the greater will be the discrepancy between the two scores.

It should be noted that these category discrepancies will sum to zero. No attempt has been made in this study to apply any specific interpretation or significance to the positive discrepancy scores which result from a higher real than ideal category score. It is not known, for example, if the appropriate interpretation would be a high satisfaction on the part of the student since it appears that he is getting more from his real teacher than he would require from his ideal teacher, or if the interpretation would be that the student feels he has gotten too much of what might even be a good thing and this proves to be a source of dissatisfaction.

4. Any one of the 75 items can be a matter of particular interest. The difference between the position of that item in the real sorting from that in the ideal sorting can indicate the student's satisfaction with his teacher in that particular item.
5. Items may also be analyzed with respect to their differential placement in the Q-sort distribution by various groups of interest to a researcher.

D. STUDENT EVALUATION AND REPORT FORM

________________________________ The courses you had with this instructor.

1. How would you rate the overall value of this course?

_____ superior
_____ very good
_____ good
_____ fair
_____ poor

2. How would you rate this instructor in general (all-around) teaching ability?

_____ superior
_____ very good
_____ good
_____ fair
_____ poor

3. How would you describe your effort in this course?

_____ Did no work at all
_____ Did some of the required work
_____ Did all of the required work
_____ Did more than the required work - as much as demands of other courses allowed
_____ Did more than the required work - in spite of the demands of other courses

4. What was the most important part of this course for you?

5. What was your biggest disappointment in this course?

6. Did the course have any influence on your future academic and/or vocational plans?

_____ great influence
_____ some influence
_____ slight influence
_____ no influence

Please explain.

7. Your name ______________________________

Year in School ____________________

IV-7: Student Papers as Evidence of Learning

Beryl Brown and Alan Rickfelder

Our research group has had continuing interest in problems of evaluating teacher effectiveness, and have had a special interest in the evaluation of innovations in teaching involving nontraditional out-of-classroom experiences. One of the advanced undergraduate courses in psychology centers around student service in a mental hospital. This gave us an opportunity to investigate the appropriateness of a term paper as an instrument in evaluating the student's experience at the hospital, and the relevant dimensions on which it is reasonable to expect to find changes as a result of the hospital experience.

A system for content analysis was devised and applied to 29 term papers from Psychology 566 (Dynamics of Mental Illness). This course requires two hours per week spent in a variety of situations with a variety of patients at Northville State Hospital.

The instructor's goals for his course were several, and provided researchers with a general framework for the analysis:

1. Critical evaluation of patient care and the ability to make meaningful and practical recommendations.
2. Critical comparison between previous notions and textbook descriptions on the one hand and the *in vivo* conditions regarding psychiatric illness and treatment on the other.
3. Specification of benefits and drawbacks that patients receive from the students' weekly visits.
4. Specification of the benefits and drawbacks that students receive from their visits to the hospital.
    a. The application of the course content.
    b. The awareness and assessment of self in the "applied situation.
    c. Personal growth in terms of self-insight and reduction of fear of hospitalized mental patients.

The papers quite clearly reflected the effect of experience in modifying notions derived from textbook and lectures and, of course, hearsay. The overwhelming majority of students (25 out of 29) described the experience as one which allowed them to overcome false impressions and prejudices about mental illness. This content analysis of student prose is in agreement with the objective assessment based on the Opinion of Mental Illness Questionnaire as reported by Hagen. (Ericksen, 1967).

A detailed report of the analysis was given to course instructors. Because pre-course measures were not available, it was not possible to make definitive statements about individual student progress. However, the analysis indicates that this group of students did indeed form rather consistent opinions about mental illness and institutional treatment. They especially pointed to the inadequacies of the hospital environment and the inconsistencies between readings and the real hospital situation.

Throughout the papers there was also constant reference to personal experience, personal growth, and commitment to changes which would probably not have happened in a traditional course. By comparing the themes that consistently reappeared with the lecture notes and assigned readings, the instructors were able to trace the impact of several ideas.

Further research should include a) pre and post tests of attitudes, b) feedback from the hospital staff regarding patient progress, c) comparison of student themes with a control group of students who do not have the hospital experience.

Reference

Ericksen, S. C. (ed) Development and Experiment in College Teaching, Report #3, Committee on Institutional Cooperation. C.R.L.T., University of Michigan, Ann Arbor, 1967.

IV - 8: Course Grades in Psychology 101

John E. Milholland, Barbara Stock

In a number of our earlier studies the grade in introductory psychology was used as a criterion to which to relate various attributes of students, teachers, and classroom procedures. More recently, however, interest in the project has shifted toward studies of processes going on in the classroom as dependent variables and an external criterion of accomplishment has not been applied. This change in emphasis in research has to a certain extent grown out of and reflects a change in the nature of the introductory social science course itself. One result has been a change in the role and the meaning of the grades given in the course. It is the purpose of this report to present some data which bear rather indirectly on the fact, rather than the nature, of changes in the meaning of course grades.

Various kinds of information seemed to indicate that grades in the course were not being used to discriminate extensively among students and that the bases on which grades were being assigned were not the traditional ones of knowledge or ability in cognitive skills. It has not been found possible to administer any kind of outcome measure of achievement in cognitive abilities throughout the course and therefore data were obtainable for the most part only from records required by the University. These data tend to support the impressions noted above.

There were 1,112 students enrolled in Psychology 101 in the Fall of 1966. The records of 721 who were freshmen and sophomores (excluding 51 from the School of Education and the School of Music and 11 for whom there were no grades recorded) were studied.

The grade distribution with students separated by class level and participation or nonparticipation in Outreach Projects is shown in Table 1.

Table 1
Grade Distributions for 721* Freshmen and Sophomores
in Psychology 101, Fall, 1966

Grade	Freshmen		Sophomores		Totals	
	Outreach	Non-Outreach	Outreach	Non-Outreach	Outreach	Non-Outreach
A	102	64	67	83	169	147
B	111	93	58	64	169	157
C	14	24	9	15	23	39
D	5	7	2	2	7	9
E	1				1	
N	233	188	136	164	369	352
GPA	3.32	3.14	3.40	3.38	3.35	3.26
GPA	3.24		3.39		3.30	

*51 students from the School of Education and the School of Music were excluded; 11 students did not have grades recorded for them.

The grade point average (GPA) for the entire group was 3.30 with the freshmen earning 3.24 and the sophomores 3.39. In the freshmen class there was a substantial advantage for a student to be engaged in an Outreach Project, with the average grade for this group being .18 of a grade above that for the non-Outreach group. In the sophomore class there was practically no advantage to being in Outreach.

The relation of scores on the College Entrance Examination Board's Scholastic Aptitude Test to grades in the course is shown in Table 2 for the 681 students for whom test data were available. As may be expected sophomore test scores are somewhat higher but within each class there is no difference between Outreach and non-Outreach students on the Verbal portion of the Scholastic Aptitude Test. There is, however, a tendency for the non-Outreach students to score higher on the Mathematics portion. These data lend some support to the proposition that the higher grades in Outreach are not based on higher academic ability.

Table 2
Grade Distributions in Psychology 101, Fall 1966,
of 681 Freshmen and Sophomores with SAT Scores Recorded.

	Freshmen		Sophomores		Totals	
Grade	Outreach	Non-Outreach	Outreach	Non-Outreach	Outreach	Non-Outreach
A	98	60	64	78	162	138
B	107	83	56	64	163	147
C	13	20	9	15	22	35
D	4	7		2	4	9
E	1				1	
N	223	170	129	159	352	329
GPA	3.34	3.16	3.43	3.37	3.37	3.26
GPA	3.26		3.40		3.31	
Mean SAT						
V	551	550	570	569	558	559
M	575	584	596	606	585	595

For the entire freshmen class entering the College of Literature, Science, and Arts in the Fall of 1966 the median SAT-Verbal score was 592, the Mathematics median was 618. The median grade point average for freshmen that year was 2.71; for sophomores it was 2.85. Psychology 101 therefore in that year enrolled 681 students whose Scholastic Aptitude Test scores were appreciably below the average for the College as a whole, but awarded them grades just over half a point higher. It would appear then that grades in Psychology 101 do not represent what they conventionally have done.

Further substantiation for the point of view that the basis for grading in Psychology 101 is different from that in other courses in the College may be obtained from the data in Tables 3 and 4. Here are shown two-way distributions of grades in Psychology 101 with each of

Grades in Psychology 101 Compared with Grades in English 123 and with Grades in Foreign Language for Freshmen in Psychology 101, Fall 1966

Psychology 101 Grade	Grades in English 123							Grades in Foreign Language						
I. Students in Outreach Projects	E	D	C	B	A	Total	GPA	E	D	C	B	A	Total	GPA
A		4	16	36	11	67	2.8		7	33	30	15	85	2.6
B		1	38	32	4	75	2.5	3	5	34	34	13	89	2.6
C		3	3	3	1	10	2.2		3	6	1	2	12	2.2
D			3			3	2.0			4			4	2.0
E														
Total		8	60	71	16	155	2.6	3	15	77	65	30	190	2.5
GPA		3.1	3.1	3.5	3.6	3.3		3.0	3.3	3.2	3.4	3.4	3.3	
II. Students not in Outreach Projects														
A		3	25	15	1	44	2.3		7	22	19	9	57	2.5
B		2	30	23	1	56	2.4	2	8	36	22	5	73	2.3
C		3	11	4	1	19	2.1	1	1	12	1	2	17	2.1
D	1		4	1		6	1.8	1		1	1		3	1.7
E														
Total	1	8	70	43	3	125	2.3	4	16	71	43	16	150	2.4
GPA	1.0	3.0	3.1	3.2	3.0	3.1		2.2	3.4	3.1	3.4	3.4	3.2	

Grades in Psychology 101 Compared with Grades in Botany or Zoology and with Grades in Chemistry for Freshmen in Psychology 101, Fall 1966

Psychology 101 Grade	Grades in Botany or Zoology							Grades in Chemistry						
I. Students in Outreach Projects	E	D	C	B	A	Total	GPA	E	D	C	B	A	Total	GPA
A		1	7	5	2	15	2.5	2	3	11	12	1	29	2.2
B		4	11	8	3	26	2.4		4	6	5	5	20	2.6
C	1		1	1		3	1.7			1	3		4	2.8
D		2				2	1.0			1			1	2.0
E														
Total	1	7	19	14	5	46	2.3	2	7	19	20	6	54	2.4
GPA	2.0	2.6	3.3	3.3	3.4	3.2		4.0	3.4	3.4	3.5	3.2	3.4	
II. Students not in Outreach Projects														
A	1	1	4	4	2	12	2.4		2	4	6	2	14	2.6
B	1	1	10	7	2	21	2.4		3	14	8	2	27	2.3
C	1	2	1	2		6	1.7	1	3	6			10	1.5
D										1			1	2.0
E														
Total	3	4	15	13	4	39	2.3	1	8	25	14	4	52	2.2
GPA	3.0	2.8	2.7	3.1	3.5	3.0		2.0	2.8	2.8	3.4	3.5	3.0	

a number of other courses commonly taken by freshmen: English 123, Foreign Language, Chemistry, Zoology or Botany.

Because of the highly skewed grade distribution in psychology 101 it may be expected that not much correlation between grades in it and in other courses would appear. This is generally the case, and only one of the other courses will be mentioned since the rest show practically the same features. In the left side of Table 3 grades in English 123 are shown against those in Psychology 101. It may be seen here that whereas students who make A's in English 123 have an average grade in Psychology of 3.6, those who make D's in English 123 do almost as well with a 3.1. When the table is looked at the other way, however, the discriminations are more sharp. "A" students (GPA 4.00) in Psychology 101 average 2.8 in English 123. The ten students who received C's in Psychology 101 averaged 2.2 in English 123.

With grades in Psychology 101 as high as they are, and not closely related to tested academic aptitude or to achievement in other courses, a natural question is whether the students are learning as much substantive psychology as formerly. Again, the lack of opportunity to obtain course-wide data made it impossible to do a thorough study of this question, but one teacher in the course in 1966-67 selected 18 items from the Criteria Test which he thought were suitable for his classes and had his students take them. He provided us with the score distribution, and we were able to compare the mean score for his students with the mean for those same 18 items deduced from item difficulty data collected in 1962. The results are shown in Table 5. The mean for the 1962 group is 1.8 points (just 10% of a perfect score) higher than that for the 1966-67 group. Although the usual statistical test of significance of a difference could not be applied, because a variance measure for the 1962 group was not available, the upper boundary of the 99% confidence interval for the mean of the 1966 group is 10.8, and this would indicate that the superiority of the 1962 group on these items is a real one.

Table 5
Mean Scores on 18 Criteria Test Items by
Students in the Item Analysis Sample in 1962 and in
Regular Psychology 101 Classes in 1966-67

Group	N	Mean	Variance	S E of Mean
1962	65*	12.2	*	*
1966-67	337	10.4	7.8	.15

*The N is approximate, since different groups of students took different items in 1962. For this reason it was not possible to compute variance.

BR-5-0784
PA-24

pt III of III

FINAL REPORT

Project No. 05950
Grant No. OE-4-10-001

Research on the Characteristics of Effective Teaching

August 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

HE 000 149

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

FINAL REPORT
Project No. 05950
Grant No. OE-4-10-001

RESEARCH ON THE CHARACTERISTICS OF EFFECTIVE TEACHING

August 1968

Part Three

Section V: New Perspectives on College Teaching

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

V-I: The Study of Affect in Classroom Interaction

Our interest in this book lies more in understanding the interpersonal medium through which college education proceeds than in the content-laden messages which tend to distinguish one course or field from another. In placing our emphasis on the developing relationships between the teacher and the students in his class, we would not want to imply that in today's universities issues of content are being handled well and need no intensive scrutiny. Whether one is more perturbed by the use of yellowed and dog-eared lecture notes long since out of date and freshness or by the faddish pursuit of the more perfect introductory text book, there is much to examine in the domain of intellectual content. Our leverage upon the proceedings of college education is elsewhere, however, and we must leave it to the instructors and students to determine what this rather generalized analysis of the process of teacher-student interaction implies for how they should handle the content of their course. Our point of entry is the realm of human feelings, affect, or emotions.

Regardless of how little teachers and students share with one another their emotional responses to the events which take place in the classroom, there is ample evidence that from kindergarten through graduate seminars the affective component of education is ubiquitous. Sometimes teachers meeting other teachers or students meeting other students after class act as if the cork had been pulled from a bottle within which the pressure had been mounting to the explosion point. "My God, what a class!" or "What a bunch of idiots!" or "You wouldn't believe what he pulled today," etc. If these cathartic post-class samples were all that we had to go on, the task of describing how the college classroom develops would be difficult indeed. In fact, it is for precisely this reason that we have studied not the lecture room but the small discussion section, because here we find a second sort of evidence regarding the feelings of the participants.

With the aid of a tape recorder one is able to create a record of the transactions within a classroom which differs rather strikingly from the typical post-session recollections of any of participants, especially those of the teacher. Whereas most members of a task group tend to recall the task-relevant events (what was covered or how far the group progressed), the tape recorder picks up events which few of the participants would be likely to consider "significant": periods of irrelevant joking and laughing, long pauses after a question from the teacher, a certain edge to the way some students ask for clarification, and so forth. We are suggesting here that what for some of the participants is merely "background noise", despite which the task performances may still be heard, can be viewed as material of significance. These seeming irrelevancies are the portals through which we may enter the affective experiences that invariably accompany task activity in human groups.

Of what form are these affective experiences? Different observers, in this still primitive stage of our knowledge, would undoubtedly prefer different formulations, but we can at least make a start by saying that one part of the affective experience is that of liking or not liking what is going on. Some people are relatively unaware of how they feel when they are involved and pleased with their surroundings; others are relatively unaware of their angers and their dissatisfactions, but whatever their conscious awareness many of their actions betoken some underlying evaluation of the events around (and within) them. Closer inspection of the emotional aspects of what goes on in the college classroom reveals more than the sense of liking or disliking what is going on. We hear unmistakable signals of personal distress, or anger which shades into defiance and rebellion, or the excited and self-satisfied pursuit of knowledge. A list of the various affectively toned or almost exclusively emotional comments would seem to be endless. Before we attempt to bring some order out of such a list, it may be useful to discuss the origin and function of these feelings. What is it we are studying when we look closely at the affective experience of teachers and students?

There would seem to be two rather different, but interconnected, answers to that question. One answer begins by construing the classroom as a task group whose product, as traditionally defined at least, involves the students' acquisition of knowledge and skill. However, as sociologists, and especially Bales and Parsons, have noted, the requirements of any task group include more than the adaptation of the group to its external demands, in this case the demand for evidence of learning. There are also internal problems, problems of integration within the group. Thus, from this perspective, the emotional life of the group may be viewed as evidence of the inevitable efforts of a group to accomplish the necessary consensus over goals, norms and procedures.

The internal tensions of any group derive in part from the divergence among members with respect to how the goal shall be accomplished. Anger and hurt feelings are a part of group life even when the aims are clear. What can we expect in a new group, the classroom discussion group, when the ultimate goals are neither shared nor explicit? When the procedures, the norms governing conduct, and the values are at best a matter for discussion and at worst a matter for debate, any task activity is very likely to stir up feelings indicative of the group's lack of integration and consensus. Feelings of anxiety in the classroom suggest, among other things, that the standards of judgment are experienced not as shared norms to which all have made their contribution, but as standards imposed from above and even from beyond the group. Feelings of annoyance and resentment flow not infrequently from the various assymetries of the classroom as a social system; some students act as if their expectations, often based on previous classes and their sense of what is right and fair, are given little weight relative to the teacher's views in the ultimate construction of group norms and standards. Some teachers, as well, are prone to express anger and resentment if their weight in determining things is less than they would like. But no scattered examples can do justice to the general point, which is that in any task group the quality of adaptive and instrumental activity affects and is affected by its constant companion, the pursuit of group integration and individual satisfaction.

It is at this point that the sociologist's questions fade in psychologist's questions, and the search for some sense of the origin and function of emotions leads into the intrapsychic dynamics and personal histories of the group members. The reason is not hard to find. Not only do the group members experience the task activities in diverse ways, but one would need to say much more about the emotions of a given teacher or student than would be encompassed by simply noting their relevance to these task activities.

Even to continue to call that person at the front of the room "teacher", as if that were all one needed to know in order to account for his behavior and feelings, is something of a strain. If we step around, behind the role and this individual's enactment of it, we find that array of personal needs, lingering self-doubts, and habitual interpersonal style which set this individual off from any other human being.

One need not and probably one could not draw sharp lines through the population of emotions in order to separate those which are role-related and those which are person-related. One need only sense that for this teacher or that student the interplay between the "givens" of the particular task group and the "givens" of the personal history which lie behind a particular moment in time. The point is that it makes sense to be aware of one teacher's investment in appearing (to himself for the most part) like a valued former teacher or to be aware of another teacher's fear that here, as before, his lack of confidence will "show" and alienate him from the students. At a particular moment it may be very clear or very unclear how these residues from the past are affecting his feelings and his behavior toward the students. A teacher's changing sense of his own competence and worth is a joint product of his habitual image of himself and the immediate feedback from the class. Whether one is studying the teacher's overt behavior or his private apperception of himself and his class, the constant juxtaposition of historical and concurrent determinants is precisely what makes the task of analysis so difficult. One is of necessity reduced to studying "everything at once."

The student, as well, is more than "a student". He is typically a late adolescent, a young male or a young female, the product of a family which is unique in human history, and a young intellect with skills and curiosities that deeply affect his capacity to profit from this new experience. Much has been written about the college student and about late adolescence in general. If we take even this limited perspective on who the student is, we find ample grounds for expecting that certain events (the threatening question or the unstructured class) will arouse a host of strong and personally coherent emotions. If emotions run strong when the situation is unstable, when one's inner identity or manifest competencies are in a fluid state, or when one is highly vigilant regarding the interpersonal implications of the seemingly impersonal task at hand, then on all these accounts we would expect the college freshman or sophomore to be experiencing and occasionally to express a variety of intense and pressing emotional states.

It is one thing to remind oneself of the ever present emotional undercurrents of life in the college classroom. It is another to decide that this or that undercurrent is of prime importance. After all, in any but the most unusual task group the normal mode of thinking about emotionality is to be rather uneasy lest the task energies of the group be dissipated by excessive concern with "what people are feeling". Much of the research on college teaching has been equally scrupulous about sticking to "the important things," i.e., the task issues of information transfer and retention. Why then would one wish to think a little harder and a little more systematically about the emotional life of the college classroom?

In trying to assess the usefulness of thinking about feelings that arise in the classroom we need to distinguish between the way one teaches and the way one tries to increase one's understanding of the teaching and learning process. We have found that for some teachers and researchers to assert the ubiquity of emotional responses to the task at hand is to assert that the proper focus of the classroom itself is not the content but the feelings aroused by the content or structure of the classroom. We assert no such thing. It is an entirely separate matter whether the teacher decides to express his feelings or to reflect and interpret the students' feelings, and our argument that the affective experience of teachers and students is an important aspect of the class is not aimed at changing teachers' priorities in the classroom. It is aimed, however, and here we have our own experiences as teachers to draw upon, at changing the priorities of teachers and researchers when they ask about "what is up" in the college classroom. When the teacher returns to his office to ponder the day's educational transactions or when several teachers try to assist each other to made sense out of what has been happening lately, then we would suggest that mastery of what we are prepared to assert is the full reality of the interactions, a reality which includes how the participants are experiencing and reacting to the class, can be of some value. Value for what? Well, value in recognizing what is going on, what these events might mean, and how one might influence the open and richly determined sequence of events yet to come.

At this time it may be useful to indicate as clearly as we can, prior to the data and discussion which will provide depth to these notions, just how we see the relevance of emotionality to matters of central concern to all teachers. We shall suggest, by the time we are nearly done with our exposition, that emotionality is an integral part of what we call work. In the somewhat special sense in which we, following the lead of W. R. Bion, intend to use this word, work is that activity of groups and individuals which is directed toward the effecttive synthesis of efforts directed toward the task realities facing the group and efforts directed toward the emotional realities of the group, its leader and members, in the course of its development. This term has attained a kind of centrality in our thinking because in analyzing classroom interaction we have found that the goal of the moment may vary from the "assigned" or external task of content mastery to the internal processes of normative integration, procedural consensus, or various pressing matters dealing primarily with individual satisfaction. We shall be especially vigilant in our analyses of the teacher-student interaction to break through the rather traditional assumption that legitimacy accrues to a classroom discussion only when the group's activity is "on the topic". We shall need to demonstrate, however, before we can be convincing about this stance, that productive activity or what we call work, can diminish as well as prosper when the group pursues its formal, appointed task to the exclusion of the integrative and individual needs of all or most of the participants.

One further point regarding work before we return to retrace first the conceptual and then the methodological steps necessary to our efforts: we would wish to make explicit some of the necessary or at least actual limitations of this whole approach to college teaching. We are examining the fate of the discussion group. We have some suspicions that teachers and students in the huge lecture room (or in small classrooms turned into a lecture room by the non-stop monologue of the teacher) experience some or all of the feelings in the small discussion group. However, in the teacher-dominated class the opportunities for work may be rather reduced. The interpersonal situation of the lecture hall does include bored or engaged expressions, non-attendance, and considerable variation in the feelings expressed by the teacher, but the opportunity for the participants to affect one another is not great.

The discussion class described here might be defined as including all classes where the students can talk more than a tenth of the time, especially if they are free to do more than ask questions of clarification. In such situations the opportunity, and we shall argue the necessity, arises to develop a fully integrated group where the interpersonal and private satisfactions are sufficient to prevent either the destruction or the decay of the group's task efforts.

Without denying in the least the relevance or the importance of the individual student's private work, carried out in the library and assessed by papers and exams, we shall focus our attention on the capacity of the classroom group to work. It might be argued that as long as the student learns the material it matters not one bit how he or the teacher feel about their class periods together. We would wish to contend with this view in a number of ways. First it is highly doubtful whether any teacher or any student would prefer to spend forty or fifty hours in a classroom whose atmosphere is heavy with boredom, whose discussions swerve constantly into tense anticipation of what will be expected on the final, or whose hostility level is so high that minor points of disagreement expand fruitlessly to consume session after session. This being so, it remains--at least on the simplest of levels --to those who seem content to let these and other disasters befall them as teachers (and students) to argue why they permit such things to continue. How much more learning per student, one might ask, must these dreary and debilitating classes be shown to produce for them to be humanly justified?

Our second answer to those who would focus simply on the private outcomes of a largely cognitive nature concerns the adequacy of that outcome as a criterion of good college teaching. Just how private is the criterion performance toward which a college education is directed? We would suggest here that the examination room is only one criterion performance; at varying distances in time from the end of the class other criterion performances present themselves. Does this college graduate recall what he has learned in a usable form? Can he share his knowledge or his problem-solving skills with others, or will he feel embarrassed at knowing more than others, self-deprecating about his capacity to be relevant, or frankly and proudly anti-intellectual in his rejection of the content and uses of his college education? Has he learned that discussion of intellectual material is exciting if not always placid, or has he learned that it is invariably conducted in the presence of an insensitive and arrogant know-it-all who tolerates nothing but either rapt attention or obsequious parroting of the correct values and sacred facts? Perhaps the answers to these questions are part of the criteria of success of a college course or a whole series of courses. Lectures may be useful for some purposes; that point is not at issue here. What is at issue is how we shall assess the outcome of a manifestly interpersonal situation if not at least in part in terms of the interpersonal relationships that develop over time. We are suggesting that if the learning situation is such that one can reasonably be expected to learn not only the content but what it's like to talk about the content, then to talk productively, to gain personal satisfactions from such discussions, and to grow in one's capacity to work in the presence of others are important if difficult goals for that situation.

Finally, we would end our answer to the question, "Why care about the course of the group's development?" by reasserting the ubiquity of emotion as a companion to cognitive activity. We must ask, even if rhetorically, whether the solitary intellectual performance is free of precisely those disruptive affects which so often make group discussions less than ideally productive. The student sitting in the library or in the examination room, or even his teacher in solitary moments of reading or writing, has good moments and bad. There are times when task activity falters and one is unaccountably tense or flooded with unnerving images of how others might respond to one's latest thought. The quality of a student's performance may be measured on an examination, but to what extent is one of the underlying "abilities" the ability to stifle or harness potentially disruptive emotional thoughts and fantasies? Effective task performance is always the result of cognitive and affective factors, whether the performance be solitary or collective. Given the elusiveness of an individual's private and internal thought-processes, one place to look directly at the complex interconnections between task and affective components of human learning is in the small discussion group. We suspect that there are few if any of the phases of a task group's development which are not found, writ small, in the individual's efforts to learn and perform effectively. Be that as it may, we intend to seize upon the ample evidence that teachers and students alike experience far more than is suggested by their manifest task concerns, and we shall examine this evidence as a means to unravel the sometimes mutually facilitating and sometimes mutually disruptive influences of task and emotionality in the learning group.

Scoring emotional expression in interaction

This, then, is an initial statement of the general purposes and aims of our study. At this point, it seems appropriate to do two things. First, we want to acquaint the reader with the primary research tools and techniques we employed to pursue our goal of understanding group and individual processes of the college classroom. Second, we want to introduce him to the sample, the four college classrooms upon whose intricate interpersonal histories we focused our attention; in so doing, we hope to establish clearly our set toward the complex interpersonal life of these groups.

How does one go about capturing the kinds of emotional expressions or messages which people communicate to or about one another or themselves? Our principal research tool here is the 16 category member-leader scoring system (see Mann, 1966; 1967). Before discussing in some detail the categories themselves, it may be helpful to the reader to have some idea of the orientations which a scorer brings to the task of using the scoring system. We begin with two central propositions, which are probably common to any attempt to make sense out of what people say, whether in or outside of a research or clinical setting. The first is that feelings may be expressed directly or they may be expressed indirectly or symbolically. The second is that any statement comes in a context of other acts, occuring simultaneously or in the past, which for the listener or scorer, gives meaning to that statement. Perhaps the most pertinent model is that of the clinician, faced with making decisions about the import of statements made by a patient in therapy. For example, if a patient suddenly begins to complain that people in his environment, his friends or co-workers, aren't responsive enough to him, ignore him, reject him, and the like, the therapist, given his past history with the patient and the nature of the relationship at the moment, may be led to infer that in fact the patient is talking about him, and further, that the comment expresses a feeling of reproachfulness or accusation which the therapist experiences as a demand or pressure on him to take certain actions or to change his own behavior in certain ways.

Or take another example from one of the classes in our sample (see Chapter Five). If a group of students is engaged in an animated conversation about the overthrow of a repressive government in a Southeast Asian country, and if this conversation occurs at a moment in the group's history when the teacher has just handed back a test which many people feel was not graded fairly, one might then be justified in inferring that the "repressive government" is a symbolic equivalent of the teacher and that the feelings expressed toward it may be displaced or indirect expressions of feelings toward him. This is not to say anything about whether or not such symbolic expression is consciously intended; there may be some conscious screening of remarks by individuals or it may be something of which they are not aware, even preconsciously. The important point is that, as most people are well aware, feelings may be displaced from their original object and directed toward substitutes. In the scoring system, a primary convention is that, although the content of a remark or statement (say, on the part of a student) may not make any direct reference to the teacher, the scorer listens very carefully for any and all implications of those remarks or statements for the teacher and uses the scoring categories accordingly. That is, he makes the assumption that at some level, there are implications in a student's remarks for a teacher.

By "level" we mean the degree of displacement of the speaker's feelings, and the dimensions of displacements which seem most relevant are 1) the extent to which either or both the subject and object are symbolized or displaced; and 2) whether the displacement is toward objects within or outside of the group. For instance, in the classroom example above, the object is outside the group, although the subject (that is, the student having the feeling) is clearly not. One could, however, imagine a conversation in which the students voice their feelings more directly, vehemently discussing how unfair, repressive, or arbitrary the teacher has been, and how they should band together to force him to change. Or, again, one could imagine a conversation in which one student reports to another an interesting conversation he overheard in which one person was expressing to another his happiness at the overthrow of a totalitarian regime. In this case, both subject and object would be located outside the group.

In this study, as in previous studies, the scorer was asked to distinguish between four levels of inference about feelings directed toward the teacher (or by the teacher toward his students): 1) acts in which the student makes direct reference to the teacher and expresses his feelings as his own; 2) acts in which the student makes reference to objects inside the group other than the teacher and expresses his feelings as his own; 3) acts in which the student makes reference to objects outside the group and expresses his feelings as his own; and 4) acts in which the member makes reference to the teacher either directly or indirectly, within or outside the group, but attributes these feelings to some other agent. Interestingly, in our study, levels 3 and 4 were scored infrequently enough so that in our subsequent analyses, these were collapsed into level 2 (a testament perhaps to the centrality of the teacher in the classroom and to the nature of the emotional interaction which goes on there).

The reader will probably be asking himself at this point if the focus on student-teacher relations alone doesn't do some injustice to the realities of the interaction and expression of affect in a small group. To this, we must agree. Students of course cathect other students with greater or lesser intensity throughout the group's history. Certainly a student in a classroom must wonder how the audience of his peers is reacting and responding to him, and many messages ostensibly to the leader may really be meant for this audience. There are several points which we can make in response to this. First, in the traditional classroom group, there is no doubt that the teacher is a social object of enormous importance and relevance for all the members most of the time; almost by definition of the small classroom group, this is true. Second, in any group, the leader, while his centrality for members may wax and wane, is probably a good part of the time somewhere in the member's psychological field; indeed, most of the literature on group development proceeds from this assumption. Finally, we may refer to earlier studies with this scoring system (Mann, 1966; 1967) which suggest that a real, complex, and at least face-valid picture of group development and interpersonal behavior emerges from its use.

Returning to the central propositions which a scorer brings to his task, we must now explain what is meant by saying that the scorer makes inferences about acts in a context of simultaneous and previously occuring acts to which he is or has been witness. The scorer, as he listens to group interactions, begins to build a picture of their pattern or structure. For instance, he may note that one person consistently makes disparaging remarks about the efforts of other students to find solutions to group problems. Remembering the other times when the member has spoken, listening carefully to the linguistic structure of the sentences, and paying attention to tone of voice and other extralinguistic cues, the scorer may conclude that the other students are not only serving as substitutes for the teacher,but that the student is in a subtle way expressing his own sense of inadequacy, powerlessness and dependency relative to the teacher. Of course, as the person speaks further, the scorer may find that the equivalence he thought was there between teacher and other students is not all that precise, and he may be forced to reconsider his scoring.

The context is similarly closely attended to by the scorer when it is necessary to decide whether a symbolic referent is equivalent to the teacher or is perceived by the student to be the teacher's antithesis. To use an example from Mann (1967, p. 41): When a group member says, "Freud would never have badgered a patient with his interpretations; he would have waited until it made sense to the patient himself," it may be clear from the context that Freud is a symbolic equivalent for the leader. But is it the case that the member is indirectly attacking the leader for being too aggressive, intrusive, or manipulative with his interpretations, or that indirectly his is supporting the leader's passive, non-directive style by equating him with the Great Man himself? Again, the scorer's acquaintance with the member's past history in the group, his feeling for what is going on at the moment, the linguistic and extralinguistic cues can aid the scorer. This is clearly a complicated task; however, we found the degree of inter-scorer reliability satisfactory, and also scorers were chosen whose introspective, self-critical and intuitive abilities were high and who had had prior experience with groups.

The scoring categories

This brings us to the categories themselves. Figure 1-1 shows the category system. It should be noted that the categories map onto the expression of feelings in groups in some ways that correspond to dimensions of personal interaction already delineated in the literature. Thus the recurrent two dimensional model of interaction with one axis representing hostility and attraction and the other axis representing degrees of power, influence or status, is captured by the Impulse Expression areas and the Authority Relations area (see, for example, Leary, 1957; Lorr and McNair, 1963; Becker, 1964). We might also note here the contributions of Bennis and Shepard (1956), Thelan and his co-workers (1954) and their quantification of Bion's concept of "basic assumption" and "work" groups, Schutz's analysis of inter-

Figure 1-1

Member-Leader Scoring System

IMPULSE AREAS

Hostility

1. Moving Against
2. Resisting
3. Withdrawing
4. Guilt Inducing

Affection

5. Making Reparation
6. Identifying
7. Accepting
8. Moving Toward

AUTHORITY RELATIONS AREA

9. Showing Dependency
   (Teacher: Showing Counter-Dominance)
10. Showing Independence
11. Showing Counter-Dependency
   (Teacher: Showing Dominance)

EGO STATE AREAS

Anxiety

12. Expressing Anxiety
13. Denying Anxiety

Self-esteem

14. Showing Self-esteem

Depression

15. Showing Depression
16. Denying Depression

personal behavior (1957) in terms of needs for inclusion, affection and control, and Couch's extension (1960) of Leary's work into a system for observing leaderless groups. The Ego State areas might be thought of as a cross-cutting dimensions reflecting the student's feelings about his own vulnerability, competence, or his sense of personal worth in relation to the teacher. Perhaps most influential here has been the work of Bibring (1963).

The partitioning of the categories into five sub-areas arises from an important convention regarding the scoring of single acts. Acts may be scored once in each of the sub-areas (except for Self-esteem which is not scored when anxiety or depression categories are scored), but the scorer is not allowed to score a single act within a single area more than once. This forces him to choose between kinds of hostility, affection, authority relations, or ego-states being expressed.

We will present each category below by defining its unique characteristics, attempting to delineate clearly its boundaries, and will give examples of relevant acts, most of which will be taken from the transcript of a class session reproduced and scored in its entirety in Chapter 5 below. Hopefully, the interested reader may skip to the quoted example in order to get a feeling for the context in which the example occurs.

1. Moving Against:

This category is scored when the expression of hostility seems directed by the student against the teacher (or vice-versa when the teacher is scored) as a person, rather than as a response to him in his role as teacher or representative of the system. Expressions scored as Moving Against may take the form of scorn, sarcasm, mistrust, belittling, suspicion, and the like, but without a moralistic invoking of values or standards of judgment as weapons (see Guilt Inducing below). For example, in the transcript reproduced in Chapter 5, Mr. C, the teacher, is trying to deal with his most contentious and troublesome student who is attempting to defend an answer he gave to a question on a test about the determinants of Negro-white differences in anti-social behavior. Mr. C, for reasons explored in Chapter 5, is very interested in having his students become more sensitive to the effects of environment on behavior, and in the segment from which we quote, is engaged in a real tug-of-war with Mr. WI, the troublesome student, a tug-of-war which culminates in the latter responding to Mr. C's questions about Negroes being made to feel uncomfortable with whites by saying in a loud and angry tone, "Well, you just don't feel comfortable talking to him, so you don't associate with him" (Act 77).

In context, it is clear that Mr. WI is expressing his angry feeling in a thinly disguised way toward Mr. C, in some sense saying, "get off my back!" Note that there seems to be a real desire at that moment on Mr. WI's part to hurt, offend, or retaliate against Mr. D, and this is the thread that runs through all acts scored as Moving Against. It is interesting that in these groups, Moving Against is only rarely scored on level 1 (e.g., "I'd be very happy if our teacher was run over by a car."), a fact which says a lot about the kind of emotional interaction which takes place in most college classrooms.

2. Resisting:

Resisting is scored when the student expresses hostility toward the role or role performance of the teacher. Unlike Moving Against, the hostility tends to be primarily reactive or responsive to teacher behavior, where in the former, the hostility is more self-initiated or active, rather than passive. In the classroom, Resisting may be seen when students disagree with points or suggestions a teacher makes (which in our study is probably its most typical form) or, more subtly, by impatience with continued discussion of a topic (e.g., "We've rehashed this argument enough times; I want to move on to something else."). A good example of Resisting occurs earlier in the same segment of the transcript already quoted. It is very clear that Mr. C is trying to get Mr. WI to perceive, or at least agree with the idea that white people's derogation of Negroes is often a potent cause of decrements in Negro performance on many different dimensions. Mr. WI's response to Mr. D's repeated questions about a Negro's feelings of uncomfortableness around white persons is met by Mr. WI's statement (which he keeps repeating in some form or other), "Because his intelligence is not up to their level" (Act 68). It is interesting that under Mr. D's persistent pressure, Mr. WI's resistance turns into the more personal Moving Against (Act 77) which abruptly terminates the interaction (Act 78). Again, the critical attribute is that hostility is relatively impersonal and directed at the other as a reciprocal role player.

3. Withdrawing:

Unlike Moving Against and Resisting, Withdrawing represents an opting out of interaction on the part of the person, an attempt to decrease intensity, loosen previously existing bonds, and the like. These may take the form at the extreme of statements about leaving the group entirely, or statements of intentions about ignoring the teacher. More frequently, it takes the form of statements about boredom, disinterest, or attempts to firmly exclude the teacher from the student's world. Withdrawal was often scored when a teacher asked a student specifically for a response, and the student responded by declining to enter into interaction (see Acts 99 and 100 in the transcript). Similarly, when a class responds to a teacher's questions by silence, this is typically a manifestation of Withdrawal, although this is again a matter of context. For instance, depending on the questions asked or the emotions the teacher is expressing, silence might be scored as Resisting or Expressing Anxiety (see below).

4. Guilt Inducing:

Perhaps a most common interpersonal tactic by which people express hostility is by invoking standards of judgment or values which purport to have a superordinate claim on the behavior of the individual. One of the msjor clues which lead one to score an act in this category is the use of evaluative terms (should, must, have a right to), as when Mr. C, upon encountering the claims of those students proposing a genetic theory of racial differences in behavior, says, "But somehow or other -- have -- you want to attack the anti-social bit, you have to somehow or other bring the environment in somewhere (emphatically)" (Act 135). It is the quality of legitimacy, of invoking the sense that a thing must be done that characterizes this act, among other things, as Guilt Inducing. The tone which people use when Guilt Inducing often brings to mind such words as accuse, blame, and complain. In a classroom setting, this often centers around formal demands which the teacher makes. Students complain directly or indirectly about the fairness of grading and grading policies, blame the teacher for overloading them with work, and accuse him of unwarranted rigidity or resistance to accepting their arguments. Perhaps central here is both the evocation of the legitimacy of demands or behavior, and the expectation that the teacher should at all times be a wise, kind, thoughtful, strong, considerate and generous authority figure. It is interesting to note that Guilt Inducing is scored as much for teacher behavior as for student behavior, which perhaps suggests that being the representative and setter of standards for what is good and proper behavior is a source of power which teachers can scarcely refrain from using.

5. Making Reparation:

Unlike the other forms of affection to be discussed, Making Reparation is scored when the person appears to be responding to some earlier expression of hostility (whether this expression actually occured or not), or as a prior response to some form of hostility which is about to occur. The main element here is that the statement represents an attempt to undo or neutralize the effects of a hostile remark. For example, statements of the form, "I don't mean this personally, because I really like you, but...," and then the person goes on to make a statement which is scored in an hostility category, represent one kind of Making Reparation. In another form, it is seen clearly when Mr. C apologizes to a female student for repeatedly mispronouncing her name (Acts 241 and 242). This example illustrates the point that while the scorer may not interpret an act as hostility (in this case, the mispronunciation of a name), the person being scored acts as if he has in fact done something to hurt or injure another person, and is trying to "make up."

Still another form which Making Reparation takes is the denial of previous hostility, not only that which the person himself has expressed but which others have expressed. For instance, after a particularly hostile attack by members of the leader, another member who did not participate in this attack says, "I think all of you people are wrong for being so angry at him, I think he's a nice guy." It's worthwhile to point out here that this act in context, might also be scored as Moving Toward, just as any of the examples offered so far might also be scored for some other category as well. To anticipate, this is simply a testimony to the complexity of affective expression; one rarely finds an act which is a "simon pure" expression of one feeling and one feeling only. In any event, let us quickly note the interesting fact that teachers often Make Reparation subsequent to guilt inducing students for failing to meet course demands. (For further discussion of the phenomena of making reparation and its function in personality, see Melanie Klein and Joan Riviere, 1937.)

6. Identifying:

Identifying encompasses all those acts in which a student gives evidence of having taken on some aspect or quality of the teacher. This may include mannerisms of speech, peculiarities of style, or personal values, general attitudes and philosophy. For instance, in a group not studied here, several students began to use the words, "it seems to me that..." to preface their remarks shortly after the teacher had first used this (to him) common expression. Similarly, in a course which was quite unstructured and student-centered, a student early in the group repeatedly defended unstructuredness and student autonomy as invaluable learning devices. Both of these would be scored Identifying.

What we are trying to capture in this category are the often indirect but highly significant forms of affection whereby one person communicates to a second person his unity or partnership in some enterprise simply by pursuing the activity without conflict. The student who picks up a point of the teacher's and elaborates upon it at such length that one could not even detect that the teacher was the crucial audience for his remarks is not expressing affection directly, but we feel that, where relevant, we want to have a category to record those indirect modes of building solidarity with the teacher while not directly addressing him. By the same token the teacher, when he conveys during a lecture or in a comment that the students are seen as a valued audience for his thoughts, can be seen as expressing affection of a most important kind. Identifying in this sense means simply the process of using the other as part of the significant "we" who are undertaking the various intellectual and interpersonal tasks confronting the classroom. At times this process may be expressed through imitation of the other, at times merely through that implicit side-long glance which says, "We're in this together." (For some other problems which arise when scoring Identifying with groups other than classroom groups, see Mann, 1967, Pp. 49-51.)

7. Accepting:

Accepting is the counterpart of Resisting in the Hostility area. Just as the latter describes a primarily reactive response to role-behavior, so Accepting expresses the student's agreement with or approval of some aspect of the teacher's behavior qua teacher. For instance, after his futile attempts to change Mr. WI's mind, Mr. C turns to several students who very clearly accept the importance to environmental determinants of behavior. In Acts 107 through 127, Mr. BR, Mr. MK and Miss JT not only respond "correctly" but seem eager to offer further examples or explanations. But all of this remains very much on the level of the "good student" responding to the "good teacher." Similarly, Mr. C compliments Mr. RN for bringing in some additional cognitive material by saying, "Well, you're bringing in the information we have been trying to read -- that's good..." (Act 126), which in this context, can be seen as an Accepting response to Mr. RN's student role behavior (although note, in the transcript, the other scorings of this Act).

Often, Accepting is quite hard to distinguish from Making Reparation, and again the scorer must pay attention to the context, especially the extent to which the person is ambivalent about his feelings; that is, the scorer listens for evidence which suggests that this behavior sounds as if it is countering some other act or not. Accepting principally suggests support, and in this sense is distinguished from Identifying which suggests similarity.

8. Moving Toward:

Moving Toward is the counterpart of Moving Against in the Hostility area. Again, we make a similar distinction between behavior oriented toward the person and behavior oriented toward the role. Moving Toward acts expresses a feeling of personal liking, of a desire to become more intimate or close. Occasionally it is difficult to distinguish Moving Toward and Making Reparation, and again the scorer must be sensitive to the context in which the act is embedded. For example, when Mr. C says to Mr. WI, "so I'm not singling you out" (Act 142), in a context when Mr. C has in fact done just that, Making Reparation seems an appropriate scoring. But when, a few moments earlier he turns to Mr. WI and says, "how does this sit with you, Mr. WI?" (Act 139), the very personal quality of this remark prompts us to score it (among other things), Moving Toward. Interestingly, many of these acts are quite elliptical and guarded, perhaps because students don't want to be perceived by their peers as "buttering up" the teacher, but no matter how expressed Moving Toward suggests some desire to establish, strengthen, or exhibit positive and personal bonds with the person, and in this way, contrasts with the more role-oriented, impersonal affection expressed in Accepting.

9. Showing Dependency:

The Authority Relations area captures expressions of student concern with the power and influence of the teacher. The category of Showing Dependency is designed for acts in which the student is perceiving himself as somehow inferior to the teacher in terms of some power base or resource control, or when the student wishes the leader to exercise this power and is trying to put him in this position by expressing his own inferiority. The kinds of power to which he is responding may be many, but in classrooms it typically is the power which a formal authority or representative of a system has invested in him, including the power to determine who shall or shall not receive system rewards, and also the power of superior knowledge and understanding which he has, or is accorded, as an expert in a particular field. The power to dispense crucial rewards and punishments seems particularly relevant to classrooms. One is often (perhaps too often) aware of times when students ask the teacher questions designed to ascertain the "rules of the road," to discover the exact behaviors which will lead the teacher to dispense rewards rather than punishments. A good example of this is contained in the following exchange (quoted in Mann, 1967, p. 53):

> Female student: What is it we're supposed to do with the cases?
> Leader: Well, we discuss them. There are many ways to discuss them.
> Male: With what reference though? Are you looking for anything in particular?

Another good example of Showing Dependency when the issue is the role of the teacher as a formal authority occurs when Mr. MO responds to Mr. C's question about the difficulties students might have had in criticizing the tests Mr. C gave, by saying, "Well, it's sort of hard to fight City Hall" (Act 183). Of the many feelings compressed into this remark, one clearly senses a concern with what is perceived to be a mighty "establishment" whose ability to exercise influence and power far surpasses one's own.

Finally, a subtle form of Showing Dependency appears when the student seems to be implicitly assuming that the group is weak and the teacher strong, and that the teacher is the one who should do something about this sad state of affairs. Often these acts take the form of angry or impatient clamoring for the leader to be more helpful, and supportive, or perhaps to magically infuse the group with "life" so that it can "go." The implied passivity and weakness on the part of the student also seems to be a way of disowning responsibility for one's own fate or destiny, in some sense giving it over to the teacher.

When the leader is scored, the category is called Counter-dominance. This captures those moments when the teacher moves against his real or perceived power by denying or disowning it. Very often this takes the form of a role-reversal, in which the teacher "plays dumb" by asking questions and defering to the student's judgment. Here indeed is a category which reflects the teacher's desire to push aside the barriers he may feel separate him from his students, barriers built into the power differential which in fact is an integral part of the traditional teaching situation.

10. Showing Independence:

Acts scored in this category carry a sense of autonomy or real freedom from the effects of the teacher's power. This may take the form of working on developing one's own set of values or principles in an autonomous way, accepting responsibility for one's own behavior, or expressing a sense of equality or colleagueship with th other. For example, in response to Mr. C's suggestion that he is too rigid an authority, Miss JT says, "Well, I don't get that impression at all. I think that it's completely open -- on the exam, especially -- just draw from your own past knowledge almost entirely, I thought." She then goes on, "and anyway, in our class discussion it was pretty open. I mean you weren't saying 'this is it.' I didn't get that impression at all" (Acts 206-207). While there seems to be a lot of Affection begin expressed by Miss JT, it is also clear in Act 207 especially, that Miss JT is detailing her independent assessment of the situation in a fairly unconflicted way. That is, one doesn't have a sense that this student is responding to being dependent on Mr. C, or is denying her own incompetence. In fact, it has a flavor of wanting to act as an equal in the task of understanding and appreciating the material.

11. Showing Counterdependency:

This category points up the efforts that people who experience or who fear experiencing dependency sometimes make to rid themselves of such feelings. Included here are expressions of denial that one is in fact at all dependent on the teacher, and also expressions of desires to destroy or do away with the power structure. Acts scored here, as distinguished from Showing Independence, typically have a more conflicted and defensive (if not driven) quality to them. For instance, in an interesting segment of the transcript in Chapter 5 (Acts 29-35), Mr. WI is at great pains not only to contradict and resist Mr. C, but also to demonstrate that Mr. C's power or influence over others in the class certainly doesn't hold for him! He expresses this neatly by cutting Mr. C off in mid-sentence several times, and then as Mr. C turns to another student, says, "At least, that's the way I thought about it" (Act 35). It is as if Mr. WI is saying to Mr. C, "don't imagine that you can bully me with your power; I've got my own mind, see?" Again, the intent of acts scored as Showing Counterdependency express some need to move to break away from a sense of dependency, rather than a clear expression of autonomy or freedom.

For the teacher, this category is renamed Showing Dominance, and it is in this category that a tremendous number of teacher acts fall. This makes sense, since the category captures the times when the teacher is playing out the traditional role prescriptions -- lecturing, calling on people, giving assignments or tests, making independent decisions for the group, and the like -- but without necessarily invoking any moral standards or value stances in order to justify this. Showing Dominance is seen clearly when the teacher simply takes over, for instance, by interrupting an ongoing discussion among students to begin to lecture. Perhaps of most significance for the future of the relationship of student and teacher are the moments when dominance and Guilt Inducing or other hostility categories are paired. The teacher described in the case study in Chapter 3 provides excellent examples of this.

12. Expressing Anxiety:

The definition of the Ego State categories owes much to Bibring (1963). He suggests that anxiety is a reaction a person has when he comes close to some danger to which he feels he may be vulnerable. The expressions may be direct expressions of anxiety (e.g., "I feel very nervous in here today") or they may be infered from tone and quality of voice, as when we say that a person's anxiety was "betrayed" by the shakiness in his voice. Occasionally one finds anxiety expressed as above without an object being specified, but more often this is not the case. In the classroom, however, it is typical to find anxiety expressed through somewhat more indirect statements about vulnerability. For instance, right after the example cited above for Showing Counterdependency, Miss JT, who is not only sympathetic to Mr. C's position, but is also involved in a sexualized flirtatious relationship with him, says, "Well, I don't know -- I don't know if I should argue this point now (over which Mr. C and Mr. WI had been quarreling) because I don't know if it's a matter of disagreeing with him or not" (Act 36). This is a complex act, since Miss JT is not only Making Reparation for Mr. WI's hostile remarks, and Showing Dependency where Mr. WI is Showing Counterdependency, but also Expressing Anxiety as Bibring defines it; that it, she expresses some sense that she might be hurt in some way if she were to get involved in the argument between Mr. C and Mr. WI at this point.

Anxiety is also readily inferred, as we have noted, from voice tone and quality. For instance, when Mr. C tries to make some kind of "peace treaty" with Mr. WI, Making Reparation and explaining his own involvement in the angry exchange, Mr. WI, rather than accepting the overture, denies that any anger existed. His "innocent" protestations (Acts 156-162) are greeted by other class members with general laughter, which, because tension was not reduced between Mr. WI and Mr. C, and because of the nervous edge in it, is scored for Expressing Anxiety.

13. Denying Anxiety:

Statements made by students or teacher which express a feeling of goodness, comfort, or relaxation can have one of two meanings. They can be expressions of self-esteem or they can be defensive denials of feeling scared, uncomfortable, or vulnerable. The critical attribute for scoring denial is the focus on negation. Thus if a person says, "I am not feeling uncomfortable," the scorer would tend to record this as Denying Anxiety. Of course, as always, the context of the act is critical in the ultimate scoring decision. Other moments when this category become relevant which are more or less subtle revolve around strong protests against feeling inner distress or belittling the possible cause of anxiety. For instance, in the transcript already quoted from, Mr. C asks Mr. SZ if he has anything to add to the argument in progress about the test. Mr. SZ replies, "I just thought it was a good argument. I like to sit back and listen to it" (Act 173). The slightly saracastic or belittling tone here, coupled with the fact that Mr. SZ was not only a very quiet person but tended to speak with a nervous tone in his voice, seemed to justify scoring this act as Denying Anxiety. (See also the discussion of low participators in Chapter 4.)

14. Expressing Self-esteem:

As noted above, acts scored here seem to be more motivated by a need to express a feeling of positive satisfaction and comfort which does not seem to contain, or be a reaction to, feelings of distress. Often this takes the form of feeling competent or strong: "I really feel we have been able to work successfully together this semester;" other times it may come out as an expression of relief or reassurance: "Well, I'm finally feeling comfortable in this class." Interestingly, Expressing Self-esteem was scored very infrequently in our study, suggesting that either it is expressed in indirect ways which we have not yet been able to specify, or that students (and teachers) rarely feel very good about themselves in college classrooms (at least, these college classrooms). We are strongly tempted to suspect the latter.

15. Expressing Depression:

Following Bibring, depression is considered an affective reaction to a person's felt inability to cope with or overcome internal or external obstacles blocking the way to desired goals. Typically it is expressed in terms of incompetence. For instance, Mr. C in response to a charge from a student that was somewhat less than flexible in grading the exam, says, "So there's a little bit of rigidity coming through. Uhm -- said very nicely, but a little bit of rigidity coming through on my part" (Act 195). In effect, Mr. C is admitting that he has not fulfilled his teaching duties or obligations in an important way, and in fact has let a personal idiosyncrasy get in the way of effective teaching.

Mr. C not only expresses a sense of incompetence here, but, we suggest, also some guilt over behaving in a irresponsible, possibly uncontrolled way. Often implied in Expressing Depressing acts is a realization of the instability of internal controls, that the person may be helpless in the face of impulse arousal. Typically in these classrooms, however, the issue is competence and centers around the inability of the person to surmount obstacles because of some personal defect.

16. Denying Depression:

Denying Depression is similar to Denying Anxiety, except that here the defense is against feeling incompetent, powerless or guilty. One thinks not only of simple negations, but also of the more complex manic defenses as well as the guilt-deflecting defenses of self-justification and othe forms of blame-avoidance. For instance, the arguments which many of the students in the transcript in Chapter 5 make of their answers to the exam questions are, as one might expect, full of acts scored as denying depression. Given student's personal investment in exams and grades, we could hardly expect them not to feel depressed if their answers are considered wrong or if their grades are low and, given the opportunity, we could also hardly expect them not to respond with attempts to counter these unpleasant feelings.

The reader who has followed us this far may be wondering how an act was defined. An act was considered to be complete at the point at which the scorer felt he had to turn to new categories in order to capture accurately the feelings being expressed. Usually this meant that the sentence was the effective unit of analysis, although the reader of Chapter 5 will note that a single act may be as long as one or two paragraphs of the transcript. A further consideration for defining acts is that when a member is interrupted, his next statement is considered to be the start of a new act, even if the scoring has not changed. Typically the number of acts per session using this system is about 200, although in the transcript in Chapter 5 there are over 400 acts scored, accurately reflecting the intensity and complexity of emotion being expressed in that session.

We have now finished our exposition of the categories we used to content analyze the interactions which occured in our four classrooms. A word needs to be said about the multiple scoring of acts. We have already pointed out above that acts which contain the expression of a single emotion are rare; and indeed one is often astonished at the richness of emotion expressed in single, sometimes linguistically short, acts. It would certainly be reasonable of the reader to wonder if this complexity is simply too overwhelming and whether by scoring many expressions of emotion in a concentrated act, one eventually ends up with an unmanageable, Jackson Pollack-like canvas, beautiful from a distance, but impossibly distracting close up. In part, this study is an attempt to answer that criticism in the negative. Even at the level of a single act, however, we feel that, rather than intolerably confusing, multiple scoring makes much more clear (or at least clearly suggests) what was going on at a given moment in the interaction.

Let one example suffice for now; the reader may want to raise this question again as he proceeds through our analysis of the data. We turn once more to the transcript in Chapter 5, and to Mr. WI's statement in Act 157. If the reader follows the transcript from the beginning to this point, he will note that Mr. WI has strongly and antagonistically resisted Mr. C's explanations about the answers to the exam questions. This open hostility seems to trigger off a wave of students to come to Mr. C's support, which he indeed welcomed. By Act 157, Mr. WI has in effect been isolated from the main "camp," as it were, and has been placed in the awkward and embarrasing position of not only being the "odd man out," the person clearly in the wrong, but also of having to deal with Mr. C's attempts to resolve the conflict and make reparation to him. After Mr. C gets through telling the class how involved personally he had been getting in the argument, and eliciting a laugh from the class, he says, attempting to get others to talk about their personal involvement, "Did that feeling sort of -- um -- was this part of what some of you people felt as well -- or -- ?" at which point Mr. WI says, "I was just trying to pick up a few extra points" (Act 157). This act is scored for Withdrawal, Making Reparation, Showing Dependence, Denying Anxiety, and Denying Depression. In context, all seem appropriate; one senses Mr. WI opting out of the conflict, trying to minimize or neutralize the hostility. At the same time he suddenly adopts a dependent stance ("I'm only a lowly student, trying to do what little I can to make it in a system where I control very few resources"), and denies, as Mr. C seemed to suggest, that he in any way felt vulnerable or guilty about letting his emotions "run away" with him. This act, then, not only has the effect of chastising Mr. C for implying that Mr. WI was at all responsible for the disruptive affects generated in the discussion, but also catches Mr. C when he has made himself vulnerable by admitting that he in fact got somewhat defensive and over-emotional. In effect, Mr. WI, through that combination of emotional expressions, has fairly effectively thrown the burden of blame and responsibility for what went on to Mr. C, with the further implication that there is no need to examine his own motives in defending his intellectual position. In this sense, Mr. WI seems to be saying, "If you raise this issue again, I'm going to come right back at you the same way as before, and since I know that I am not as conflicted as you are, there is no need to examine whether or not my motives for holding the position I took in the argument were mixed in any way." In fact, when the issue again comes up, Mr. WI comes right back to the attack; however, this time, Mr. C clearly overwhelms him by his arguments.

We certainly grant that this is complicated, but, we feel, complicated in a way that allows us to raise important questions. Why does Mr. WI need to conceptualize his relationship to Mr. C as if they were on a battlefield? Where does his anti-intraceptive, externalizing style come from? What kind of work in the classroom is possible for such a person? How does his behavior effect the relationship Mr. C has with other students? How does it interfere or facilitate their ability to work? This study is, hopefully, a start along the path to answering such questions.

Mechanics of studying the classrooms

The procedure for scoring classroom interaction using the 16 category system was as follows. A single observer (a graduate student in psychology at the University of Michigan) was assigned to each classroom. This person brought a tape recorder to each session of the class throughout the semester, was formally introduced as a research assistant, and thereafter observed and tape recorded each session. Scoring of the tapes was then carried out by each observer, who scored the tapes for the group he had observed. The data from the scoring protocols were then punched onto cards for later data analysis. In addition to the taping, the students filled out various instruments designed for this study both during and after the semester. Two years later, each student was mailed another follow-up questionnaire. Finally, the observer interviewed each student once during the semester and interviewed the teacher several times. The instruments and interview are discussed in more detail at later points in this book.

The sample

Since the bulk of this study focuses on the teachers, students, and classrooms in great and complex detail, there is not much point here in entering into a close analysis of the characteristics of the sample. Some background, however, may help the reader to get a feeling for the context in which this study was carried out. We selected four sections of Introductory Psychology (Psychology as a Social Science) at the University of Michigan as our sample. Each of these sections was taught by a male graduate student in psychology, two of whom were in the field of social psychology, and two of whom were in the field of clinical psychology. These teachers were similar in some important ways. First, they had all taught at least one semester previously, but considered themselves as neophytes in the teaching profession. Second, they were all students themselves at the time they were teaching, taking required graduate courses, getting ready to pass preliminary examinations, and the like. Thirdly, and perhaps most importantly, they all shared a common work environment by being part of the introductory psychology teaching system. What this meant was that each of the teachers had complete autonomy to teach the course the way he wanted. He developed his own syllabus, prepared his own materials for lecture or discussion, developed his own tests and graded the students as he saw fit. These sections met three times a week, and once a week all students in the course (approximately 1200) assembled in a lecture hall to hear lectures or see movies or listen to round-table discussions. However, there was no demand that the weekly "mass" lecture be integrated into the discussion section course. The rationale for this system is discussed in more detail in a later chapter. Suffice it to say that this system fostered the growth of a surprisingly tightly interlocked peer culture which, at its best, supported these teachers in their attempts to work out a meaningful teaching style. During the semester in which this study took place, the week teaching seminar was the scene of some lively and intense confrontations between young teachers in the process of forming their own philosophies of teaching. Indeed, as will be clearer later, many of the critical events of the classroom groups' histories were precipitated by teachers responding to pressures they felt emanating from their peers.

The students, on the other hand, were a fairly representative cross-section of the predominantly middle and upper-middle class population upon which the University of Michigan draws. Most of the students were second-semester freshmen, a sizeable minority were second-semester sophomores, and a handful were juniors or seniors perhaps taking the course to fulfill a requirement they had skipped in their earlier years at the University. Although it is typical for men to outnumber women at universities, our sample was divided approximately equally between men and women, reflecting the commonly observed fact that women tend to cluster in courses which emphasize personality and development as this one did. Most of these students were in the Liberal Arts college; small minorities represented Engineering, Chemistry, Business Administration, and Architecture colleges. These students, it should be noted, knew that they were subjects in a study, and in fact were paid $10 for their participation.

V - 2: Dimensions of Teacher and Student Activity

Before proceeding with the description and analysis of teacher-student interaction we need to discuss at some length the first process through which we would try to understand the affective states captured by the category system. The statistical technique most appropriate to this effort is factor analysis, and perhaps a few words are in order about what, in our view, factor analysis can and cannot accomplish.

The basic idea underlying factor analysis is that any measure, no matter how descriptive and interesting in its own right, may be viewed as reflecting some pattern of presumably more basic or fundamental attributes. Cattell has distinguished between surface traits, for which the categories would be the relevant analog, and source traits, to which the factors sought in these analyses would be analagous. We shall wish to use the terms phenotypic and genotypic in a similar manner to describe the categories and factor, respectively. The argument here would be that two feelings which are shown to go together may be viewed as phenotypic manifestations of some common underlying affective process.

If Expressing Anxiety were found to be positively related to Expressing Depression, as in a previous study (Mann, 1967), we might then conclude that both categories are, at least in part, reflections of a more basic or genotypic dimension called distress. Before pursuing the actual data on the feelings of teachers or students, however, it is important to specify the two kinds of genotypic processes in terms of which we shall attempt to understand our factors: the situational and the historical determinants of the observed feelings.

The situation may be such that, given, for example, the particular task and structural realities, certain feelings have positive or negative associations with one another. To take one such case, we have found in this study that for the teachers to be dominant is inversely related to their tendency to be scored as Resisting and Accepting, two feelings which are in turn positively related to one another. Upon close examination it turned out that Showing Dominance (and talking a great deal of the time) are characteristic of the lecture style employed on some days, whereas both Accepting and Resisting are characteristic of a more reactive discussion style employed on other days. The covariation of agreeing and disagreeing observed in the classroom might not be found elsewhere, but in this situation the genotypic dimension of lecturing vs. discussing turns out to be of considerable importance.

The second class of genotypes which we must consider in trying to explain the observed covariation of two or more categories has to do with various previously learned associations between feelings and between the several modes by which feelings may be expressed. For example, we find in this classroom study, as we did in an earlier study of more intense and volatile classroom groups (Mann, 1967), that for the students, Guilt Inducing and Showing Dependency are positively related to one another. Might this fact reflect some underlying genotypic process deriving from each student's prior contact with authority figures? There are indications that one antecedent of this pattern of dependency and complaining is a sense that authorities can be disappointingly weak. From these and other data we are led, then, to think about the personal histories of the group members out of which come interpersonal styles and predispositions that affect their perceptions and feelings in the classroom. This conviction is strengthened by additional evidence which indicates that Guilt-Inducing in the very same set of classrooms is also, in the context of another factor, positively related to Showing Counterdependency. Evidently the classroom situation, while it produced disappointment in some, produced another genotypic process, which might be called rebellion or challenge, that is particularly active in some students or on some occasions.

The two genotypic processes, situational and historical, are hopelessly interwined in most cases, but our effort in this discussion has been simply to alert the reader that neither explanatory set will do all the necessary work. A reasonable expectation about what factor analyses can yield, given the data in terms of sixteen categories, is that we may learn from the covariation among the categories, how individuals, influenced and constrained as they are by the major interpersonal styles available to members of this society, manage to organize the various feelings they are experiencing within the additional constraint of a particular task situation which is both new and familiar to all the participants.

It must be evident that we are not likely in this study to emerge, as might those using factor analysis to study the dimensions of human abilities, with "invariant" dimensions applicable to any social situation. Our hopes are more modest. After appropriate statistical operations on the"going-togetherness" of the sixteen categories we can hope for three kinds of gains over the situation which obtains when we use simply the original set of categories. First, we will have some greater sense of how the sixteen categories go together. For example, we have found in this study that Expressing Anxiety and Expressing Depression do not in fact go together in any way which would cause us to invoke, for these data, any such genotypic process as distress; however, Expressing Anxiety does turn out to be positively related to Showing Dependency and negatively related to Identifying which makes us wonder what kind of genotypic process could exist such that identifying with the teacher turns out to define one end of a dimension while anxiety and dependency define the other end. More of that later; for now it is sufficient to indicate that factor analysis raises a while series of questions as to why certain categories go together in a positive or a negative fashion.

If that were our only interest, however, the zero order correlation matrix would answer such questions in a perfectly satisfactory fashion. The second yield of factor analysis, not available from an inspection of the correlation matrix, involves an appreciation of the several meanings of a single category depending on the context in which it occurs. Each factor or dimension specifies several categories which go together to define the positive end of a dimension, and if bipolar, another set of categories defines the negative end of the dimension.

To take an example from the teacher's behavior, Showing Dominance turns out in this study to suggest three underlaying processes, each of which is statistically independent of the others. One variation on the teacher's dominance occurs when the teacher talks a great deal, seems quite preoccupied with the content material, and scores relatively low on the categories indicative of the responsive, close teaching style. Variation one amounts essentially to a lecturing style within which dominance has its first meaning. The second context within which Showing Dominance occurs provides no evidence about what else is present, only evidence about what is absent. Dominance, in the second factor worth considering, is the opposite of a somewhat hostile and depressed performance, and our task becomes one of understanding dominance in this sense, as an alternative to or escape from a certain bitterness and discouragement. The third factor or gestalt of feelings within which we find Showing Dominance suggests that dominance, in the context now of Resistance, is the opposite of two categories (Identifying and Showing Independence) which convey a kind of collegial and informal relationship. We shall in the later sections of this chapter discuss each of these factors. Our point here is that one value of factor analysis lies precisely in this kind of unraveling process wherein one can sense the several functions and meanings of a single category by learning about the several contexts within which it is likely, or unlikely, to occur. Showing Dominance turns out to indicate (a) a highly active or lecturing style, (b) a lifting of the depressive and discouraged feelings to which teachers are prone, and (c) a kind of distance or formality vis a vis the students. It all depends upon whether one, two, or all of the three contexts are operative at the time.

The third advantage of factor analysis is that one is able to make the number of variables more manageable, to reduce the dimensionality of one's total set of measures. In questionnaire construction where one might reduce several hundred items to five or ten factors this is of enormous importance, but in our data this advantage is of less relevance. It is true that graphing or otherwise manipulating sixteen categories could become burdensome, but our analyses yielded seven factors for both the teacher and the students. The savings are not enormous, and we feel that the gains derivable from the two sets of seven factors flow primarily from our ability to capture and estimate in quantitative terms at least some of the important patterns of feelings which underly the sixteen categories.

We are now finished with the discussion of "Why factor analysis," and the next order of business is to present the results of our efforts. We intend to present our data here and throughout the book in two ways. In the text we will present the data in a form which the general order to evaluate and extend our work. Thus, in presenting the two factor analyses, the complete factor matrix, the data pooling procedures used to obtain these factors, and the factor estimation techniques used for subsequent analysis will all be discussed in the footnotes at the end of the book. We will also, from time to time, remove to the netherland of methodological footnotes some of the selfjustifying rationales which, however controversial to the cohort of researchers, might seem picayune and irrelevant to the college teacher who is curious more about what we found than about the how's and why's of our research operation.

Factor analysis of the sixteen categories, whether for teachers or students, begins with the intercorrelations of the categories. What must be determined before one can calculate the intercorrelations is what constitutes a data-point, a segment of observed behavior which is the basic unit of the total population of data points. The time segment chosen as the basis for these factor analyses was that period of time within which both the teacher and the students taken as a whole, initiated twenty scorable acts. The 20-20 segment was chosen as the smallest unit of time for which stable enough data were available on both the teachers and the students, and the preference for the smallest possible time-span reflected our sense that as the time span increased, dynamically disparate elements would be thrown together and thus obscure the underlying interpersonal processes.

Each factor analysis was based on a total, after pooling the data from all four groups[1], of 582 20-20 segments. For the factor analysis of the teacher's behavior a seventeenth variable was added: the percentage of the acts in the segment initiated by the teacher relative to the total acts of the teacher plus the students. It is labelled %T. Seven factors were extracted and rotated from each set of data.[2]

Tables II-1 and II-2 show in schematic form the major and minor loadings of each variable on the seven factors. In these cryptic summaries we have in effect reduced the complexity of the full factor matrix to an indication of (a) the direction of the relationship (± or -) and (b) the magnitude of the loading (where ++ or -- indicate loadings beyond +.40 or -.40, + or - indicate loadings from +30 to +.39 or -30 to -.39, and no entry indicates loadings from +.29 to -.29). The first factor for the teachers, for example, has major positive loadings from two categories, Resisting and Accepting, and has a major negative loading from %T and a minor negative loading from Showing Dominance and Identifying. The question now is how, other than through the not entirely unknown procedure of "free associating" to the array of titles of variables with major positive and negative loadings, we can come to understand the genotypic process?

After extracting the seven teacher and the seven student factors, what we did was to attempt to retrace our steps and identify those segments which best exemplified the positive and negative ends of each dimension. In order to accomplish this we needed to estimate how each segment would "score" on each of the fourteen factors. Factor estimates were calculated,[3] and we then located from eight to twelve segments which were very high and a similar number which were very low on a given factor, and were at the same time in the medium range on all other factors. We then returned to the tape recordings of these segments in order to determine the content, tone, and interpersonal dynamics of the particular segments. Our analysis of each factor will begin with a resume of the particular categories with positive and negative loadings on the factor in question, but we will then try to indicate in more qualitative terms what characterizes the most representative segments at each end of the pole. Finally, we will try to summarize our impression of the major genotypic processes reflected in the factors which emerged from these analyses.

Table II - I

Dimensions of Teacher Behavior

Categories	Factors						
	I	II	III	IV	V	VI	VII
1 Moving Against		--					
2 Resisting	++		-				
3 Withdrawing				-	++		
4 Guilt Inducing				++			
5 Making Reparation		-		++			
6 Identifying	-		++	-			
7 Accepting	++			-			
8 Moving Toward							++
9 Dominance	-	++	--				
10 Independence			++				
11 Counterdominance						++	++
12 Expressing Anxiety				+	++		
13 Denying Anxiety					++	+	
14 Self-Esteem						++	
15 Expressing Depression		--					-
16 Denying Depression		--					
17 % Teacher	--						

Table II - 2

Dimensions of Student Behavior

Categories		Factors						
		I	II	III	IV	V	VI	VII
1	Moving Against					++		
2	Resisting		++					
3	Withdrawing			+			--	
4	Guilt Inducing	-				++		
5	Making Reparation				++			
6	Identifying	++	-					
7	Accepting						++	
8	Moving Toward				-		+	++
9	Dependency	--						-
10	Independence	++						
11	Counterdependence		++			+		
12	Expressing Anxiety	--						
13	Denying Anxiety			++				
14	Self-Esteem							++
15	Expressing Depression				++			
16	Denying Depression			++				

Teacher Factor 1

Reaction

major positive loadings
resisting
accepting

Proaction

major negative loadings
percent teacher

minor negative loadings
showing dominance
identifying

The most salient aspect of Reaction, the positive pole of Teacher Factor I, is that the teacher accounts for fewer of the acts than is usual; that is, the students do a higher proportion of the talking. Many of the teacher's comments are direct responses to student acts, a fact indicated by the importance of his accepting-resisting style in the segments which scored highest on this factor. The distinguishing quality of Reaction is a high degree of interplay among the participants in the classroom.

In proaction, the other pole of this factor, most of the talking is done by the teacher. We find fewer Accepting-Resisting responses to the students, a reduction accompanied by new stresses in the directions of dominance and identification. The dominance in Proaction is primarily that which we associate with an expert's lecture. Similarly adapted to a lecture model is the Identifying found here, represented, for instance, by the "we" in "where we seemed to be going in the last session leads me to say some things about..." In acting thus the teacher presumes, often without checking the degree to which it corresponds to reality that he and the students are striding off into the unknown with roughly equal amounts of curiosity and task orientation. More often than not, the scoring sheets from segments which had extreme scores on Proaction include page after page of lecturing. The teacher carries on a monologue, proceeding by reacting to his own statements.

While the Proaction end of this factor denotes processess which are quite similar from one classroom to the next, Reaction denotes processes which differ somewhat across the four classrooms. In some classrooms there were long student-led discussions with no more than an occasional addition or suggestion from the teacher. In others, the highest degree of interplay consisted in the teacher's questioning the students or vice versa with little interaction among the students themselves. In studying the developmental history of the classroom, however, we can ask the same key question in all four cases: Why does the teacher during some specific periods of time switch to a style which allows more interplay than does the extreme of Proaction.

As one can imagine, there are innumerable considerations which may combine to nudge a teacher in one direction or the other alone the Reaction-Proaction continuum. A proactive style, for example may reflect a teacher's fears that were the students to get the floor, they would attack his methods and ideas or subvert progress via naive comments or inane detours. At other times, however, we find the teacher lecturing because, for one reason or another, he had been unable to involve students in the reactive discussion he would have preferred. Or, still again, Proaction may indicate that the teacher feels he has something especially valuable to impart which he can best put across in a monologue.

The considerations which make the teacher move toward a reactive style as more comfortable or effective are similarly variegated. The teacher may, for example, feel a need to discover where the students stand either in regard to their depth of understanding of the material or in regard to their feeling about what has been happening in the classroom. He may also want to involve the students in the subject by getting them to think and speak actively about it or to foster their feelings of competence and excitement in reaching conclusions under their own steam.

Although there are inevitably some students who are anxious to talk more and others who would rather have the teacher lecture, the formal authority vested in the teacher gives him the final power to decide between reactive and proactive classroom styles. Usually he will alternate easily between them as the need strikes him. But this same decision can be responsible for major structural changes which propose to give one style long-term supremacy. For example, the teacher of Class B spent the eleventh session presenting a plan whereby everyone would sit in a circle and students would be appointed to lead discussions. This plan was adopted and the next nine sessions score as highly reactive. By the end of this period, there was a general feeling that more structure was needed, and the teacher formally announced the beginning of a proactive lecture phase.

Some Reaction Segments:

I. A discussion among the students regarding child-rearing proceeds for several minutes. When some confusion arises, Mr. B breaks in to pull a few of the threads together and to criticize some of the comments the students have made.

2. In the midst of a lecture on genetics, a number of students beseige the teacher with questions and criticisms. Mr. C replies to each of them, amending and broadening some of his previous statements in the process. He then proceeds with the lecture, but, in the process, asking questions and obtaining answers more frequently to assure himself that the class is following his presentation.

Some Proaction Segments:

1. It is late in the first session. Mr. B is explaining procedural and formal details and responding to infrequent requests for clarification from the students. He then launches into a twenty-minute-long explication of his plans for the class.

2. Mr. D is giving a long lecture about the use of scientific method in the social sciences. Just before the hour ends, the students ask some questions about the details of the assignment.

Teacher Factor II

Role Satisfaction	Role Dissatisfaction
major positive loading	major negative loading
showing dominance	denying depression
	expressing depression
	moving against
	minor negative loading
	making reparation

The hallmark of those segments which scored low on Factor II is the teacher's dissatisfaction with the state of affairs in the classroom. The two high loadings on depression reflect not only the teacher's frustration but also his inclination to blame himself for either causing or being unable to alter the discouraging state of affairs. An additional tendency to shift the blame to the students shows up in the large loading on Moving Against and the concomitant reparation for hostility either expressed or felt.

We find a variety of factors which depress teachers and shake their confidence. Often, a large number of such factors are found together and signify a pervasive failure of communication or lack of any consensus about goals. One factor often encountered is the apparent inability of students to grasp and apply concepts and viewpoints which seem quite natural to their instructors. This can raise grave doubts in teachers about their ability to put ideas across and to judge accurately the needs of their students. It forces instructors to revise hopes and schedules in midstream. On the other hand, the instructor may be tempted to suspect the students of laziness, passive aggression, or even crippling stupidity.

Other problems that arise frequently are more directly traceable to conflicting aims of the parties in the classroom. One is a tendency for the students' concerns about grades and tests to overshadow other elements of classroom life. The teacher feels himself cast as a distant ogre and may see the students as timeservers totally uninterested in what he has to offer. Another is that students in these classes were seldom as independent as instructors might have desired; they often favored passive intake of knowledge over any more active role in their own educations. At the other extreme, too much student independence led, on occasion, to fears on the teacher's part that he was losing control of the class and that time was being wasted in fruitless discussion.

In classroom situations where the teacher experiences frustration and communications break down, he may be led into fantasies and actions which are self-contradictory and harmful to chances of improving the situation. Rather than attempting to discover the true level of student understanding, he may imagine at one and the same time that his students don't understand him at all and that they are waiting to demolish every argument he makes. He may become so defensive towards criticism that he is unable to use the information it conveys in his attempts to resolve the problems which impede progress.

He may inspire distrust by soliciting student suggestions as to how to improve the class and by then treating these same suggestions as attacks which must be strongly countered.

During periods of role dissatisfaction, the teacher appears to doubt his desire and ability to play the many roles which are part of his job. As an expert in his field, he feels he has nothing to say or is unable to communicate what he does have to say. He may feel he uses his authority too harshly or too weakly, or both, but at different moments. Filled with self doubts and facing an unresponsive or contentious class, he is especially unable to present himself as a model for emulation or to transmit his enthusiasm and involvement in his field.

It would be incorrect, incidentally to think that the teacher's dissatisfaction is always completely evident either to himself or to the students. The importance of the category of Denying Depression is one indicator of the teacher's frequent attempts to suppress or ignore disruptive feelings when Role Dissatisfaction is present. Many of these segments roll by with no more indication that things are amiss than a dull note in the teacher's voice or an infrequent sarcastic remark. In other segments dissatisfaction may be hidden by forced joking or a feverish involvement with strictly intellectual material. Depression, hostility and reparation are low, and in their place, one finds a high concentration of self-confidence and effective teaching. The positive loading on Showing Dominance indicates that the teacher is able to impart his knowledge or use his position to regulate the flow of the class without arousing his own fears of being sadistic, demanding, overpersonal, etc. His confidence high and his negative feelings toward the class eased, the teacher is free to stimulate vicarious excitement and involvement by letting students identify with his own experiences. The teachers seems generally relaxed in these segments and show a great deal more warmth toward the classes. They seem to enjoy the activity of teaching and to be genuinely concerned about what the students learn.

Some Role Dissatisfaction segments

1. Mr. D is reviewing and summarizing an assignment on learning theory. His style in this segment involves asking questions as he goes along, but the students consistently fail to come up with the correct answers. As this process continues, his behavior shows increasing signs of weariness and depression. At one point, he is discussing a study done with problem-solving in monkeys and asks how a problem was solved. There is a long, uneasy silence. Finally, he says, "Come on, people. The monkeys were able to solve it."

2. There is to be an hour exam the next session, and both the teacher and the students are nervous. Mr. C is lecturing quickly, laughing, and joking a good deal. The students seem to understand the material imperfectly. Mr. C appears bothered by this and unhappy about the stress the students place on the exam. At one point, after making an elaborate joke to illustrate a concept, he says "If you don't get this you're in trouble. Any dramatic effect will do." He makes a number of comments to the effect of "Don't make a big deal out of this test." Then to illustrate the concept of interaction effect, he remarks that an authoritarian personality would dislike a democratic teacher like himself.

Some Role Satisfaction Segments

1. Mr. C is lecturing about psychological factors in the selection of marriage partners. He sounds relaxed and unhurried. One gets the impression that he is a married man helpfully explaining some of the phenomena of marriage to some friends who haven't encountered them yet.

2. Under the leadership of one of the students, the class is discussing the psychosexual development of children. One student asks for clarification of a point and Mr. B explains it in detail, using the blackboard. The discussion is taken up again after he has finished. There is a smooth flow of interaction throughout the segment.

Teacher Factor III

Colleague	Formality
major positive loadings	major negative loading
identifying	showing dominance
showing idependence	
	minor negative loading
	resisting

The issue here is one of relative status and contrasting types of leadership. In the Colleague factor pattern, the teacher treats the students as equals and identifies with them. His classroom style in this situation casts him as a primus inter pares or even a co-explorer of the uncharted realms of psychology. There are other times, however, when the teacher acts somewhat distant and superior. In segments with high scores on Formality, on the other hand he tends to play more the part of the experienced guide than a co-explorer. We are left with the impression of a great difference in status between the teacher and the class. At the extreme, he resembles the boss or overseer.

Embedded in the polarity of this factor is the issue of ownership or responsibility in the classroom. A class in which the students are considered colleagues is to some extent "owned" by the students. They are apt to have more say in the directions and the content taken up. They will feel that they deserve some credit for a good class and that they bear some of the responsibility for improving a bad one. In an arrangement where the teacher functions as a formal supervisor, however, he will 'own' the classroom and determine what the proper goals should be.

As with the Reaction factor pattern, the Colleague factor pattern differs in content from teacher to teacher. There are teachers who often treat students as academic equals and leave many of the decisions affecting the classrom situation in students' hands. For other teachers, acting as a colleague is no more than a slight unbending from a consistently formal style. Nonetheless, the teacher is always more informal and egalitarian on the Colleague end of the factor than on the Formality end.

At the extreme of the Colleague factor, we find the teacher who is willing to accept whatever the students happen to bring up as defining the subject matter for that day. The primary functions of such a teacher center on facilitating the students' journey along paths of their own choosing, although this may occasionally expand to include presenting relevant vignettes from his own experience for the students to ponder as they consider the subject at hand. At the extreme of Formality, on the other hand, it is the teacher who chooses the paths for initiating the class into the mysteries of a subject that he knows best. The issue of authority is especially pivotal for this factor pattern. A teacher trying to work his way into a Colleague relationship tends to play down the authority aspect of his role, while a teacher moving toward Formality stresses it in various ways.

The existence of Factor Pattern III helps us to distinguish two polarities which seem to be easily confused by new teachers. These are formality-colleague and Proaction-Reaction. At first thought one might think that discussions are bound to be less formal than lectures. Our data reveal that there is no anomaly in having a discussion presided over by a teacher whose stance is distant or superior nor in having a lecture presented to people who are viewed by the teacher as colleagues. As we shall see later, teachers sometimes become considerably less proactive without effecting any changes in their underlying formality and distance from the students.

Some Colleague segments

1. Some students are attempting to figure out what pair of then will prepare some material for a future class. After they hit a few snags, Mr. B attempts to facilitate a resolution, e.g., "Bonny, do you think it would be at all possible to work things out over the telephone?" They reject his solution and work out one they like better.

2. Mr. C is eagerly questioning Nat who has returned from a civil rights march in Alabama. After Nat makes some remarks about police brutality, the teacher launches into a story about his experience with some incredibly authoritarian state troopers. It's a long funny story which he tells in a quite informal manner.

3. A student is giving a lecture on infancy. At one point, Mr. B breaks in, apologizing, "Gee, I hate to interrupt, but I've just got to tell you about this thing that happened the other day." He relates a story about a baby he had observed over a period of time.

Some low segments

1. Mr. C is handing back a test. He compliments the class liberally on their performance then explains some of his grading. The students raise some objections, which he attempts to meet.

2. Mr. D is lecturing on perception and asking occasional questions as he goes. The students grope for the right answers. He tells then if they are correct or not. He is the only person in the class who can claim to know the subject at all well.

Teacher Factor IV

Punitiveness	Low Punitiveness
major positive loadings	
guilt inducing	
making reparation	
minor positive loading	minor negative loadings
expressing anxiety	identifying
	accepting
	withdrawing

Punitiveness is an example of a unipolar factor. Rather than providing us with two distinct, opposed patterns, it allows us to speak only of the presence of absence of a particular aspect of the teacher's total repertoire. Thus the score of a segment on Factor IV is simply a measure of the extent to which the teacher acts punitive in that segment.

Guilt Inducing has by far the highest loading on this factor and is the most evident aspect of the high-scoring segments. In these interchanges, the teacher berates the students for doing something wrong. He occasionally apologizes for doing this, insisting that he is generally pleased with the students despite his criticism. The teacher's discomfort in Guilt Inducing finds expression in his anxiety and in the relative brevity of such bursts. The tension aroused in the teacher during these segments is apparently hard to sustain, and an outburst of Punitiveness tends to be followed rather quickly by a switch into Role Dissatisfaction or some other factor pattern.

The tension involved is not too hard to understand. A number of students have failed to meet some goal which the teacher has set; for example, they may be espousing their prejudices rather than dealing with material on a scientific basis or may have failed to complete reading assignments. He is attracted to using the powerful manipulating force of guilt to pull and push them towards attaining the unfulfilled goals but is restrained by other considerations from giving full rein to this tendency. One such consideration is the drop in his own self-esteem when he realizes that he is actually making the students feel bad. This is accompanied by fears that Guilt-Inducing will destroy all possibility for future rapport. Another factor in his restraint is the knowledge that the students might not accept his assessment and might, instead, attempt to pass the blame for classroom deficiences back to him.

Although it is reasonable to surmise that classroom conditions are far from optimal during periods of high in punitiveness, it is perhaps less obvious that guilt-inducing occasionally represents an advance for the teacher. It is a fact, however, that many new teachers shoulder a disproportionate amount of blame for a lack of work in the classroom. They have themselves spent long years as students and have a lingering empathy for the common student strategy of avoiding work when possible. Besides, lack of experience and uncertainty as to professional skill make it very easy for the new teacher to feel that he himself is responsible for student lacks. If students seem apathetic, he may feel he has driven them off with uninspired teaching or a poor performance in the matter of setting requirements.

In such an atmosphere, it may indicate a real gain in self-confidence for the teacher to remind the students that they, too, have some obligations to meet. Teachers in our sample chose varying times to do this. Some punitive segments occur at the begging of sessions, indicating, perhaps, that the teacher had spent some time thinking about the issue of student responsibilities in the period between classes. At other times, internal constraints against being punitive were overcome by the teacher's need to defend himself against attack. For example, Mr. B's most punitive segment came after a student told him that a book he had assigned was "really horrible".

Since Punitiveness is accompanied by a tendency on the teacher's part to emphasize his standards of excellence, it is not surprising to find a diminished tendency here for the teacher to encourage student independence. The teacher here is likely to place more stress on the students' acquiring familiarity with established norms and methodology than on their attempts to make progress on their own initiative.

We have noted that the low pole of Factor Four is defined primarily by an absence of this punitive syndrome. The largest of the negative factor loadings suggest that when teachers act less punitively, they may be more likely to identify with the students, accept what they say, and withdraw from confrontations.

Some Punitiveness Segments

1. In the session after an hour exam, students are arguing about the teacher's grading of a multiple-choice question.

Clark: "It's a distinct possibility that the Negro has these genes."
Mr. C.: "Did you state that it's a distinct possibility? Because the vast majority of people stated very simply that Negroes are inferior to Whites in I.Q."

Later when Paul refers to the fact that the teacher earlier had stated that their opinions were welcome, he replies, "What is the purpose of my giving you information if you don't use it? If I wanted your opinions, I could say OK class, now we're going to do nothing for the next six weeks but sit around and listen to your opinions."

2. Mr. D is expressing his irritation over the giggling reaction of the audience to a lecture on Freudian elements in the story of Cinderella. He says, "What is it that bothers you people so much about hearing these things about childhood? I think you should ask yourself that question." And later, "I think one goal of psychology is facing these things in yourself."

Teacher Factor V

Apprehension

major positive loadings
withdrawing
denying anxiety
expressing anxiety

Here we have another factor with significant loadings on only one pole. Withdrawing, an infrequently scored category, shows up far more often in high pole segments of factor V than in the low ones. Anxiety either denied or expressed adds the remaining flavoring.

One gets the impression in listening to High in Apprehension segments that there is some sub-surface friction which may or not break into open confrontation at any moment. The fact that the teacher resorts to occasional acts of Withdrawing does not necessarily mean that he is fleeing this encounter. Not flight, but ambivalence about which way to move, is characteristic of this mode. Perhaps the confrontation is necessary in that the underlying tension can be borne no longer. On the other hand, it is seen as potentially painful and apt to get out of control. The withdrawing illustrates only one side of the tension and may be more of a passing gesture than a real moving away.

When and why do some potential confrontations cause such anxiety and avoidance? One of the most common situations occurs when there have been ambiguous indications of student apathy or discontent. The teacher may want to ask the students precisely what they dislike or want changed, but he is afraid that their criticism might be unanimously harsh and personally painful or that it may lead to frustrating impasses. This is particularly true early in the term when the expressions on the faces of the new students represent unknown qualities and there has been no chance to build up bonds of mutual respect and trust within which criticism can be more easily tolerated.

Another potentially explosive issue in psychology classes arises in dealing with sexual or other emotion-arousing material. It seems that too personal or explicit a discussion arouses fear of the class' becoming hopelessly bogged down, frightened, or entangled, while failing to deal fully with such issues might take the emotional impact out of education and leave unresolved tensions. Again, we find an implicit threat to the teacher's control and possibility that the classroom will become too personal for comfort. Therefore, instead of meeting the underlying problems head on, the teacher skirts their edges, first approaching a bit closer, then withdrawing for a while on some convenient tangent. His performance presents the listener at times with an almost teasing quality as he builds toward confrontation and then subsides again. He may eventually precipitate consideration of the issue or perhaps some student will, or else the class will somehow lead in a different direction and the issue will lose its immediacy. But for the time being, the teacher remains anxiously on the periphery, unable to take firm steps in either direction.

One point to note is that while potentially devestating issues present themselves more or less sharply in nearly every class session, the teacher only rarely falls into the cycles of anxious approach and avoidance which characterize this factor pattern. On some days he will straightforwardly either put off or deal with problems which create the greatest apprehension on others. As we have noted, one simple determinant of such behavior is how well he knows the students. This is but one of many factors contributing to the crucial issue of how strong and confident the teacher feels on the day in question.

Some Apprehension segments:

1. Mr. A has been covering the educational theories of Bruner and Skinner. It is obvious that he is mentally comparing his own teaching to their standards as he lectures, and after some hesitation, he asks the class how one could improve the teaching of psychology according to the idea of these men. The class seems more than willing to avoid the immediate implications of this questions of this question, as the first two or three students talk about teaching mathematics. Finally, Marie suggests that the class should be given more initiative and that he should allow them to hold discussions without interference. He very quickly and anxiously replies by asking the class "What do you think?" When George affirms that he finds the teacher's guidance necessary, Mr. A becomes less anxious and begins supporting Marie's ideas, though on a rather abstract level.

2. A discussion of myths has led to a discussion of sexual intercourse as an example of how one activity illustrates a number of themes. Mr. C seems nervous and keeps making statements like "We're way ahead of ourselves in terms of material covered, but keep these things in mind for the future." At one point after the discussion has turned to childhood fantasies, Roger asks if the mind doesn't have some means of blocking all this material. He replies with alacrity, "Yes, certainly, you're quite right. If we had all this stuff on our minds all the time, that would be just horrible. So somehow the idea of a blocking mechanism has to come in." He then postpones answering some other questions and begins lecturing on another topic.

Teacher Factor VI

Display

major positive loadings
expressing self-esteem
showing counter-dominance

minor positive loading
denying anxiety

Teacher Factor VI is another unipolar factor pattern. The most relevant category for Display is Expressing Self-Esteem, a very infrequently scored category accounting for less than 0.5% of all scores in three of the four classes. When teachers do openly express self-esteem, however, it can color a whole segment. Here we find it linked with counter-dominance, teacher's refusal to play his traditional dominant role, and less importantly, with the denial of anxiety.

If we could paraphrase what the teacher is saying in these segments, it might sound like "I'm willing to let you in on the secret of how great I am." The counter-dominance displayed here is often by way of introducing the students to the teacher's inner thought processes, a presentation of the yet-to-be-revealed deftness and competence. The teacher steps outside his role just far enough to reveal that he enjoys being the all-powerful authority, the all-knowing expert, the super-perceptive facilitator, or the all-around "cool guy". This seldom occurs with great openness or for great duration, but it is impressive when found.

As before, we find a variety of situations in which this factor pattern appears. One of these is most commonly found late in the term and carries a note of self-congratulation on the process of the class. The students are working well, things are running smoothly, and the teacher is complimenting both the class and himself for this state of affairs.

When the Display pattern arises earlier in the term, the teacher's motives tend to be somewhat different. One seems to involve an attempt to counter by means of a public assertion of strength and confidence the anxiety created by performing in front of a group of indifferent students. Another goal is to avoid the feeling that the students perceive the teacher as a cold, distant formal authority with no life outside the limitations of his professional role. Besides being uncomfortable about having such a constricted and unaccustomed identity, he may feel that the students would exhibit far more effort and enthusiasm if they could get over seeing him only as a distant teacher figure. To students who are unresponsive, contentious, anxious or seem to be full of disabling transferences toward him, the teacher is saying, "Hey, look, I'm not that cardboard figure you're involved with. I'm an interesting, three-dimensional person with a life outside this classroom."

Unfortunately, this early strategy can seldom meet the demands the teacher makes on it. The students' problems and concerns have foundations that are too sturdy and complex to be so easily put aside. The students are just as likely to react with suspicion and dislike to the teacher's boasting and his protestation of counter-dominance as they are to be reassured by them. And perhaps they are not totally without justification in their suspicion; Display can mask back the teacher's hostility toward the students whose behavior causes him so much distress and his unwillingness to get to know the students well enough to deal more directly with the sources of their distance and their distrust.

Display can also appear simply because the teacher is taking advantage of the centrality of his classroom role to soak up a bit of the limelight. This can be quite enjoyable when the whole class is caught up by a spirit of triumph over some success, but it can leave the teacher feeling foolish and naked if the class fails to respond to his stage-center pirouettes. This, coupled with the lack of success of Display in moving the students toward more work and greater friendliness, may well account for its diminution after the early sessions. When it appears later in the term, it has a more benign appearance; the students share in the teacher's exultation rather than having it thrust at them.

Despite the fact that students may be overwhelmed or angered by Display performances, in the right setting they may act as a spur to student attempts to imitate the teacher along various dimensions. By virtue of his incipient narcissism, the teacher presents himself as a person worthy of emulation. Meanwhile, with his counter-dominance, he communicates the message that he is not a distant god, but rather a person whom the students can emulate if they wish, While the Display factor includes some of the teacher's less effective efforts in this area, such performances can be important in making the teacher's field and his work exciting and relevant to the students.

Some Display segments:

1. Mr. C is talking about the links between early childhood experiences and adult character. He illustrates his points with a number of stories, most of which bring laughter, e.g., "Haven't you ever heard one of these guys say 'I'm going to defecate all over you.' I don't know. Use your own terms." Jack, who appears rather worried about the damage parents can do to their children's personalities, asks "Well, how do you handle something like toilet training?" The teacher replies that he doesn't think it's too hard and that "I think, in all these cases, that flexibility is a key issue. I think you have to be a pretty healthy person yourself." He continues his story-telling and falls behind his lecture plan, but affirms that "As long as you keep asking questions, which I place as the highest form of teaching, it's all right if we don't cover everything."

2. Mr. B has passed a student on the street and said only the word "bang" to her. Giggling, she confronts him at the start of class to ask "What does 'bang' mean?" He explains to the class, "See, I was walking down South University Saturday afternoon with a bottle of wine in a paper bag and thinking about this class. You know, teachers don't always think one hundred percent benign thoughts about their classes. And I looked up to see Peggy walking by and..."

3. Mr. D has done an experiment with his class as naive subjects by presenting them a problem designed to appear as a test question. The question could have been answered by following either of two paths. Now, he has revealed that he never intended to grade the question and tells the students why he thinks so many chose the option they did. He bases his argument on the idea that there was a high degree of fear of failure in the class. Lisa asks why he assumed that this was true, and he replies, "I don't know. It was just my intuitive perception when I handed people this piece of paper and noticed them suddenly go pale."

Teacher Factor VII

Warmth

major positive loadings	minor negative loading
moving toward	expressing depression
Showing counter-dominance	

Here is a factor pattern dominated by the moving toward category. Quite simply, the teacher plays down his dominance and acts warm and friendly. In addition, we find a tendency for him to express depression less often than usual. The relaxed joking and the warm concern expressed in this pattern may reveal a more personal side to the teacher than is displayed in other classroom interactions.

As with Display, we find some difference in the quality of the Warmth factor depending on the time of its occurrence. In late sessions, it can express accumulated friendliness for people with whom the teacher has been working closely throughout a whole term. In early sessions, it is more an attempt to establish such a friendly atmosphere.

Aside from the usual benefits accruing from warmth and friendship, there are special reasons for attempting to create such a climate early in the term. For one thing, the teacher may use Warmth to allay the anxiety and insecurity that many of the students experience when faced with a new classroom situation that is full of unknowns. Another motive can be the teacher's hope of getting the students on his side, so to speak, with a view to their working hard in his class later in the term so as not to let him down. Obviously, warmth will not provide a magical solution to all the concerns which keep a class from optimal functioning. It may, however, provide a start in the right direction if it is followed through by effective teaching which continues to take the students' concerns into account.

Some Warmth segments:

1. Mr. A is using the example of learning the names of the students to illustrate classical conditioning. He suggests that it would help if girls would reward him by smiling when he remembers their names correctly. In trying to lead the class to an independent formulation of conditioning, he says "There are two rules here, and psychologists have worked on them for many years, but I think you'll be able to tell me what they are right off."

2. At the start of a session, there is some mechanical trouble with the tape recorder. "We could turn that monster off," Mr. C tells the class. Then he gives back an assignment, remarking "you've done a terrific job and should pat yourselves on the back tremendously. I think something like sixty to seventy per cent were A's." After he finishes handing them back, he says "What about that assignment now that I've buttered you up. I dare you to say it was a lousy assignment."

3. The teacher is drawing X's and O's on the board to illustrate gestaltist theories of perception. When he asks students to place these symbols into groups, they keep doing it in ways that surprise him. His standard responses to this is "My word, isn't that a surprise." In answer to a student question as to whether their responses hadn't disproven Wetheimer's theories, and you can just see Wertheimer sitting down and drawing these things on a piece of paper and saying: "Aha! I've discovered a new perceptual principle. Let's name it."

* * *

This concludes our account of the factor pattern for the teachers. Before we leave this area and proceed to a consideration of the patterning of student behavior let us pause for a moment to put our findings into some kind of framework.

The teachers enter a classroom at the start of the term with professional goals of fostering student work and learning and with a variety of personal needs including a desire to be liked and respected and a need to establish an effective professional style. They have some ideas, in advance, of how to achieve these things, but they must be ready to respond to the nature of their particular classes and to learn, as time passes, to develop and refine their methods for reaching these goals. Their conceptions of the goals, themselves are also bound, with time, to grow more complex and explicit.

It comes as no surprise, then, that five of our seven teacher factors describe activities that bear directly on the teacher's efforts to insure the kind of relationship and environment in which work can flourish. The two most important of these are the most wide and general, the factors named "Reaction-Proaction and Colleague-Formality. Changing scores on either of these factors indicate that the whole framework of process and relationship in the classroom is being readjusted to accommodate any of a wide range of perceptions and strategies. The other three factors, Punitiveness, Display and Warmth, may also be attempts to regulate the flow of interaction, but usually on a less all-encompassing basis than the first two.

Finally, we have two factors which lie more in the direction of the teacher's expression of ego-state. The first of them, Role Satisfaction-Role Dissatisfaction, is particularly useful in that it affords us a quick indication of the teacher's perception of how well the class is progressing toward the goals he holds. The other, Apprehension, picks out for us the pattern of teacher response which implies some lack of confidence and fear of encounter.

These seven factors give us a multi-dimensional picture of the teacher's apperception of and response to the developing classroom. Now we may move ahead by delineating the seven student factors which round out our descriptive equipment.

Student Factor I

Enactment	Anxious Dependence
major positive loadings	major negative loadings
Showing independence	Showing dependency
identifying	expressing anxiety
	minor negative loading
	guilt-inducing

The Anxious Dependence pole of the first student factor reveals a fundamentally dependent orientation on the part of the students vis-a-vis the teacher. Experience first with their parents and then with a succession of elementary and secondary school teachers has led most students to various expectations of what a teacher should be: a person existing on a higher plane, doing the leading, taking the responsibility, making the rules, setting the assignments, evaluating, rewarding, punishing, and knowing at least most of the answers. Some of the students' responses to such a figure have their origins in the very early family situation; others are adaptations to previous classroom experiences. The students' status as undergraduates at a good university confirms the relative appropriateness of both responses in the past.

The strategy of depending on the knowledge and authority of the teacher can foster a sense of security, but it can also lead to anxiety. The man who assigned responsibility for the progress of the class is also assuming a great deal of power over the lives of the individuals in it. His assignments set the students running off to the library on evenings and weekends; his tests and grades may have overwhelming practical and symbolic significance. Nominally, the teacher has absolute control over such matters, but actually students are not without weapons in this arena. One which they can use to soften the hand of an authority who seems too strong to attack directly is to induce guilt in him, to imply that he is a heartless ogre if he persists in demanding assignments and harsh judgments. Both Anxiety Expression and Guilt-Inducing go hand in hand with showing Dependency in this factor pattern.

The teacher's capacity to arouse anxiety is not limited to his functions as judge and grader. Let us consider what happens when the teacher seems to be unwilling to take the dominant role which is the complement to the students' dependency. The students have learned to operate successfully by responding dependently to a dominant teacher, but they may well have had scant practice operating in some student-centered modes. The possibility of losing the teacher's protective leadership may be unsettling, as may be the possibility of attaining a new equality and even intimacy with a person in a position of authority. When students feel anxious over such issues as these, they may again respond by attempting to induce guilt in the instructor, The message may have changed from "You're a cruel and threatening judge" to You're not teaching us the way you're supposed to," but the pattern of showing Dependency, Expressing Anxiety and Guilt Inducing remains intact.

As we shall see with all the student factor patterns, some students are much more likely than others to display a given pattern, and a segment with an extreme score on a factor might be caused as much by unaccustomed activity of people who frequently act this way as to a change in the mood of the entire class. These interindividual differences partly depend on previous experience and will vary with such factors as sex of the student and manner of upbringing. With respect to Anxious Dependence, for example, there is little doubt that dependence on a male authority has different meanings for male and female undergraduates. We will deal with some of these differences in more detail later on.

In some instances, however, the same students display extreme behavior on both poles of a factor. Such was the case in one session in which the teacher was previewing the types of questions to be expected on the final exam.

This activity on the teacher's part led to one of the most dependent and anxious performances of the whole term characterized by a long string of questions starting with the phrase "Will we have to know...?" After answering a number of them, the teacher said, "Let's go back to the discussion about Walden II that we were having last time," and the class responded with a segment that was extreme on the opposite pole of the factor, with the same cast of characters leading the way. It appears that they had learned two distinctly different role relationships, either of which they could assume or discard at will.

One way of moving beyond anxious dependence on an authority is to start acting like him, a mode which we find in evidence of the opposite pole of this factor. This is most clearly seen in a loading on Identifying, and a parallel loading on Showing Independence implies a feeling of equality on the part of the students. Identifying is scored most frequently when the students' style approaches that of the teacher; they may make their arguments scientifically sound in the manner of the teacher's preferred style, volunteer their own knowledge of relevant material, or even utilize the teacher's perculiarities of phrase.

We have given this combination of Independence and Identifying the name Enactment since the students appear to be trying to enact the teacher's role. The concerns which led to Anxious Dependence have been resolved, at least for the moment, and this frees student energy for productive, task-related activities. During periods of high Enactment, the students make progress primarily through the effective use of their own faculties. The teacher's knowledge and experience are no longer the sole source of all enlightenment but rather merely one of the many resources which are available.

Some Enactment segments:

1. A discussion concerning the social determinants of perception is in progress among the students. The issue has arisen of why the members of a certain African tribe perceive a rotating trapezoid in a way different from civilized Westerners, and students have split into two different positions on the point and are making arguments for one side or the other. Mr. B eventually breaks in a way that indicates that he feels he has the correct explanation, but the students treat him as just one more party to the debate. Jim remarks, "Well, if that's the point you're trying to make, I can use the same argument against it as I used against Andy."

2. Mr. C is lecturing on the topic of identification with aggressors and is at first having trouble getting the students to recount any experience of their own as illustrations. Finally, Jack gives an example of Negroes on the Selma march wearing helmets like those of the state troopers. The other students are intrigued by this and start asking him questions about the behavior of the various groups in the march. The discussion runs on without the teacher's participation for some time and is finally cut off by the striking of the clock.

Some Anxious Dependence segments;

1. Mr. B begins a class by complimenting the students on their high level of understanding so far and by saying "Since you have been assimilating the material so well, I think we can go beyond what we've been doing and try a new format." He then details a plan for future sessions which includes having everyone sit in a circle and having students give short lectures and lead discussions on assigned topics. When he finally asks how the students would feel about such a class, he is greeted with a long, tense silence. Then students begin anxiously questioning him about details, for example, "I don't quite understand the role of the discussant. What exactly do you have in mind?" A typical reaction is that such a class might not prepare the students sufficiently for tests, and Perry asks that the teacher summarize what has been learned at the end of each class.

2. Mr. B is explaining the format which he is planning to use for the final exam. He receives questions and complaints, such as "I don't think we'll have enough time," "Are we going to be tested on psychosexual theory?" and "If it's going to be multiple choice, don't we have to reread all the articles? I mean, gee, we only have a week left before the exam."

Student Factor II

Consent	Contention
minor positive loading	major negative loading
identifying	resisting
	showing counter-dependency

The two poles of Factor I do not complete the story of student reaction to the dependency issue. Student Factor II, Consent vs. Contention, pivots about the same issue. Students acting in the mode of Contention appear to be made uneasy by dependency, but their reaction is markedly different than that characterized by Anxious Dependency. When students acting in the latter mode were dissatisfied with their relationship to the teacher, they tended to resort to Guilt Inducing. That is, they attempt to force the teacher to be a bit more compassionate within his dominant role. In Contention, however, the students aim is more in the direction of denying the teacher's right to play such a role in the first place.

Students acting in this way exhibit first a resistance to much of what the teacher says and second a great deal of counter-dependence, i.e., a rejection of the dependent role they feel they are being called upon to play. One gets the impression that much of their discomfort at the thought of being in such a role has to do with dissatisfaction at having to submit to a more powerful figure. The road to emulating the teacher's power and prestige is blocked for the moment, perhaps by his hostility or by some clear domonstration of his superiority such as giving a test, perhaps by the students' inability to picture any other stable relationship with him. For these reasons, the students feel they can counter their powerlessness only by contentious self-assertiveness.

Many of the high segments which have scores on Contention come in response to some action of the teacher's which particularly stresses his dominance. Grading tests, settling assignments, or flouting his superior knowledge of the field are some of the teacher's activities which often trigger contentious responses. While it is no great surprise to find a student reacting this way to having his ideas treated as naive and silly, we often find contention appearing quite in the absence of any such provocation. The explanation for this may well be that the student transfers a generalized resentment of authority onto the particular classroom situation. A relevant example is the experience of Summerhill School in England where it is found that new arrivals often spend their first months rebelling against the democratic staff members as if they were no different from the authoritarian overseers the student had encountered previously.*

One thing worth mentioning about the high segment of this factor is that the student actors involves are primarily males. Assertion of strength, denial of weakness, and competition for dominance are salient issues for males, particularly those at the age level of the students. Various reasons for this might be adduced: that competing for positions in a pecking order is part of man's animal heritage, that males replay Oedipal dramas in relation to male authority figures, and so on. At any rate, many male students seem unwilling to accept much domination by a male teacher, especially one only a few years older than they are. The teacher may be himself attracted by the challenge of competitive play in which he holds a favored position. The teacher's enjoyment of his dominant position seems occasionally threatened by the possibility that all the students will unite against him in a powerful alliance, and he may sometimes be seen testing out his strength to convince all parties of the sturdiness of his power.

It should not be thought that females never engage in Contention, but they do seem more often to play the part of a relevant audience in the jockeying for position among the males. One interesting case that we noted occurred when a female student who had acquiesced to the teacher's argument on a certain point suddenly found several males defending the cause that she had given up.

Another point to note is that the students do not seem to envisage a total victory in their battle. They may force the teacher into displaying a new respect or changing some exam scoring, but they do not really expect to break his authority over them. Strong denial of dependence may be used to cover some hidden desire for it, and some students appear to depend on having an authority there to contend with. A true expectation of independence and responsibility seldom has such a protesting ring to it.

The classroom situation at the consent pole of this factor is considerably more peaceful with Resisting and showing Counterdependency being at a low ebb. The only category association with this pole is a minor loading on Identifying and, in this respect, is somewhat resembles enactment. However, the positive loading on showing Independence and the negative loading on showing Dependence that were associated with Enactment are both missing here. Students here are more willing to allow some degree of dominance to a teacher with whom they identify. We detect more harmony as to goals between teacher and class and more student consent for the teacher's leadership.

---

* Neill, A.S. _Summerhill_. New York: Hart, 1960.

Some Contention segments:

1. Mr. D has been asking questions to assure that the class is familiar with Riesman's three models for insuring social conformity. He asks "Can someone give me an example of an other directed university?" After Donna suggests that a school with many fraternities would fit the bill, he asks, "How about the University of Michigan?"

"Not all of it," she protests.

"Yes, why not? It bears a great similarity to Reisman's description."

Several students defend their school by averring that there are, after all, several real individuals on the campus. "How can you make a generalization about as many people as there are here?" asks Floyd.

"You were perfectly willing to make a generalization about seven hundred million people in contemporary India," he reminds him.

"Well I think it is probably easier to make that generalization about India."

"Well, I think that is probably true because you don't know quite as much about India as you do about the University."

2. Mr. B is lecturing about conditioning and being rather condescending about the student's inability to grasp it easily. He takes as an example his own power to condition the class, e.g. "I can reward you every time you talk and the result will be that we'll have a great deal of class response." Two boys argue about terms for a while, but he manages to convinance them that he is right. Then Eve confesses that she still doesn't understand. He tries to explain classical conditioning by using the example of teaching her to read. "First, I reward you every time you pick up the book, like 'Yes, Miss Hayes, you're holding it upside-down. Very good! Tome breaks in very angrily to say "That's not classical conditioning at all. That's operant." When the teacher hems and haws, Tom continues to press his argument that Mr. B's entire presentation has been wrong.

3. After a test, Mr. C is reviewing multiple choice answers. He comes to an example about a boy who, raised apart from his siblings, tested 210 in I.Q. "Twelve of you missed this one. What threw people off?" Ross beings to argue that an alternative choice also explains the pheomenon very well. For every sentence of his, the teacher has five in his own defense. Finally, he admits that Ross' explanation is possible although rather more round-about than his own. "Look," he says, "I'm going to write bad items. Let's not kid ourselves. But I think you're making the kind of inferences that require stretching when you answer it by making minimal inferences." When Ross continues adamantly claiming that he has been wronged, the teacher argues "OK, how many people 210 I.Q.'s? How many of you have 210 I.Q.'s? Raise your hands." The discussion is finally cut off by the end of the period, but its consequences may be found in the session which has been reproduced in Chapter 9.

A Consent segment:

1. Mr. B begins a session by saying that he just has a few details to cover before he turns the class over to a student pane. Among them is his preview of the material to be covered on an approaching test. Students ask a couple of questions about details, but seem neither anxious nor argumentative. Then the teacher declares himself finished and the members of the student panel introduce their presentation.

Student Factor III

Concealment

major positive loadings
denying anxiety
denying depression

minor positive loading
withdrawing

The factor pattern of Concealment arises from the combination of two common defense mechanisms, denial and withdrawing. Apparently, whatever is responsible for underlying tensions in the students at times when Concealment occurs would cause even more discomfort were the tension to be admitted into full consciousness. Instead, the students laugh off their anxiety, deny that there is any reason for depression, shift the topic of conversation, or ignore the implications of disturbing lines of thought.

What causes the tensions that lead to denial for the student? One factor seems to be the study of various human behaviors that show our species up in a gloomier light than we might choose. Prejudice, wars, grotesque hidden impulses from the strange long-ago, intrusions into daylight of the irrationalities of the dream-world; all these are more or less impressed upon the student in a first psychology class. It is no wonder that students often seek ways to ignore such knowledge or at least to avoid its personal relevance. The chroniclers of man's ways, they maintain are looking only on one side, the analysts who find sex in everything are a little strange themselves, or "There's a guy in our dorm who fits that description almost perfectly."

The issue, then, seems to be one of the students being driven toward admitting impulses and feelings which they usually suppress. As we know from discussions of shame and guilt, this suppression can occur in two ways. One is the necessity to hide impulses from oneself as they would otherwise disrupt normal functioning or upset positive self-evaluations. The other is the urge to conceal "bad" or "strange" parts of the self from the social consciousness of the classroom because of the fear that either the teacher or the other students would disapprove or snicker. Naturally these two suppressive techniques serve each other and in Concealment we find both in operation.

The material being studied is not the only aspect of the course which stirs up ego-alien feelings and a corresponding need to suppress them. Every social grouping has implicit rules about what may and may not be brought into the communeal consciousness, and the classroom is no exception. Among the realities the student customarily hides, we find laziness, avoidance of work, boredom, disinterest, and strong negative feelings toward the teacher. Although the students may conceal some of these feelings even from themselves, the most salient need is to avoid displaying them in front of the teacher. This is particularly true if the teacher is intrusively probing into the students' feelings or acting punitive. Many of the segments with high scores on concealment occur during confrontations in which teacher and students discuss with each other how they feel about the progress of the class. Even the strongest student criticism at these times filters through disclaimers such as "I think that what we've been doing here is really valuable and that we're learning a lot of interesting stuff, but maybe it would be a little better if..." One imagines that the degree of internal repression here is rather smaller than that evoked, say, by studying Freud; it may well be students would be much freer, for example, in expressing their feelings about the class during the teacher's absence.

Some Concealment Segments:

1. Mr. A has presented various alternative plans for how he will count the grades on assigned papers. Stu points out that, under the system being discussed, straight A students will have no incentive to do a good job. Two of the better students in the class disagree sharply, claiming that A students will work anyway because they are perfectionists and because they have more intrinsic interest in the material. They make it clear that they do not welcome the idea that getting good grades is their chief motivation for working.

2. On the previous evening the film, "Night and Fog", a documentary about a Nazi concentration camp, has been shown. The class seems reluctant to begin work; there is a lot of laughter and talk until long after the hour has begun. When Mr. C says "I just want to speak to some of you concerning a last paper for a few "secs", class members make the association "sec's"=sex and laught about it. Finally the class gets under way with the teacher's asking the students how they felt about the film. Elsie replies "Maybe it hit so hard because it was a documentary, not just a movie with actors. Yet, you know, it was almost as if the people didn't look human, so the effect, --I mean, I knew that they were, but they just looked so different. Another student, Elliott: "It was difficult for me to realize they were people because you see so much of this on TV and in the movies."

Sue asks "Those nurses outside the ovens, did they know what was going on, do you think?"

"Well, they were knocking off 80,000 people a day at the peak, "Mr. C replies. "They must have known somewhere."

Three segments in a row continue on the high extreme of this factor.

3. After a lecture on Freudian symbolism in the Cinderella legend, the class is quite skeptical. "Don't you think that was driving a little hard to say losing her shoe was losing her virginity? I mean, that was scraping the bottom of the barrel," May asserts. And Pearl says, "After all, you can read something psychological into absolutely anything. They just read so much into it."

4. In the previous session, a discussion of whether mothers should work aroused quite a bit of strong feeling. Now Mr. B asks whether the class felt the discussion was useful. Ned replies, "I certainly don't think it was a complete waste of time. Of course, the girls were beaten pretty badly. They were all confused and driven by emotion." Libby's answer is "I thought it was very interesting, but it shouldn't have come up in class because it's too personal. It wasn't reasonable; it was just a fight. It's the kind of thing that should go on in extra time."

Student Factor IV

Discouragement	Low Discouragement
major positive loadings	minor negative loading
expressing depression	moving toward
making reparation	

The depression which has the highest loading on Discouragment has two chief causes. The more important of them has to do with the students' inability to perform effectively within the classroom. Realities such as uncomprehended lectures, poor grades on tests, and halting class discussions often spur students toward this factor pattern, and a cold, dissatisfied, and punitive performance by the teacher may exacerbate it. There are times when this depression, compounded of self-percepts of sloth and stupidity and, possible, the premonition of a low grade for the course, is countered by the insinuation that the subject is being inadequately taught, but this happens less than usual in segments high on Discouragement. Instead, we find Expressing Depression mated to the category of making reparation.

What appears to be happening here is that the students are accepting some of the blame for the failure of the class to perform as well as it might. We should not imagine that hostile acts directed towards the teacher suddenly cease, but the frequent reparation interspersed through them is something new. The reparation expressed here also has two distinct sources. One is the students' direct apology for their poor performances; the other may be reparation for the real or suppressed attack on the teacher's adequacy in leading the class.

At first thought, the motive behind reparation would appear to be a desire to avoid the powerful teacher's wrath toward the students for their slowness, their laziness, or their fall in questioning him. This motive is undoubtedly present, but here is another aspect of reparation which should not be overlooked. Melanie Klein has pointed out that the infant, after an episode of rage and anger, fears it has injured or destroyed the nurturing mother. The result is both depression and an attempt to restore or repair the damaged object. This same process can be distinguished in student discouragement. In their state of depression over the inability to learn, the students are more aware than ever of the need to have someone to provide both information and support. This creates a concomitant need to preserve the nurturant teacher, to avoid injuring, or, less symbolically, alienating him. Klien's formulation includes the idea that adult work often derives a part of its motive force from the need to make reparation, an idea we might keep in mind to understanding the genesis of work phases in the classroom's developmental history. We have already noted that, in many instances, reparation occurs alongside of, or just after, an attack on the teacher. The question arises, then, as to whether the attack and the attack and the reparation come from the same quarter or are carried on by different groups. The answer is that both patterns occur. Sometiems we find attacking students hedging their arguments with various disclaimers. At others, different students address the teacher with a more apologetic or supportive tone, as if to remind their classmates of the deference due him. Whichever way it happens somebody sees to it that the message of reparation is aired.

The second chief source of depression in the classroom is nothing more than the discouraging nature of some of the material presented. Examples include Nazi atrocities, schizophrenic behavior, and films on autistic children. The teacher may feel as depressed and helpless as the students in the face of such facts as the poor-prognosis for the pathetic children in the film, but he at least has some greater familiarity with the problem than do the students who look to him for some way out of their distress. Again we find the need for a nurturant leader, again a tendency to deference and reparation on the students' part.

The only significant loading on the Low Discouragement pole of the factor is a minor one on the Moving Toward variable. We have a much friendlier picture here, with more play and laughter. These performances are addressed more to the personal characteristics of the teacher than to his superiority as a hard-to-please expert and authority.

Some Discouragement segments:

1. Discussion of a multiple-choice test is in progress. Byron is arguing over the correct answer to one problem, on which he was marked down. "It seems plausible to me he begins, "I'm not saying I agree with it, but it seems plausible that it's all genetic. Maybe Negroes have different genes. I'm not saying I believe this, but it is possible." The teacher cuts off this argument prematurely because he wants to review the rest of the test before the end of the end of the period. "The answer to number 12 was part C, Minus 93," he says. "Nineteen people missed it. Anyone want to tell me why?" Al answers, "I don't understand this. The numbers seem to come in varying intervals." When Mr. C explains that this is irrelevant, Al says "Oh, I see." Another boy says he had assumed the correlations had to be positive. "I just wasn't thinking," he admits.

2. Mr. D is lecturing about experimental methods and the concept of operationalism. He asks the class how they would test a phrenological assertion that the presence and size of a certain bump on the head indicated

acquisitiveness. One student after another repeats an answer, all of which are rejected as impractical or inexplicit. Eugene finally hypothesizes that you could measure acquisitiveness by telling someone a story and seeing how many questions they asked about it. When the teacher points out that Ralph has confused acquisitiveness with inquisitiveness, he becomes quite dejected and says, "Gee, I'm sorry."

3. After a film about autistic children, there is a general depression about the state of human knowledge concerning this area. Students ask, "Excuse me, but could you define schizophrenic?" "Don't they know a cure?"

4. Bill has been complaining about the number of technical terms used in a confusing chapter in the assignment. "I found that the best way to understand the words was to read the examples," suggests Tony.

Student Factor V

Challenge

major positive loadings
moving against
showing counter-dependency

minor positive loadings
guilt-inducing

In that it includes large loadings on negative impulse categories and a smaller loading on counterdependence, Challenge bears some resemblance to our Contention factor. Here also the students launch an attack on the teacher; here also they vigorously deny any need for his help or protection. There are, however, important differences in the two factors which we would do well to explore.

The main clue to these differences lies in the differing natures of the negative impulse categories involved. The resisters of the Contention pole of Factor II are, first of all, careful to maintain some appearance of equality with the teacher. The argument is presented as a serious debate in which both parties have rights and obligations and which can be settled by recourse to reason or additional data. The attack focuses on some kind of content, the correct answer to a test question, for instance, and fits fairly comfortably into the normal classroom procedure. Episodes of Contention may be of substantial duration, involve many students, and avoid the appearance of being personal attacks. The rebellious and power-testing aspects of these performances are typically played down or concealed.

The largest loading on Challenge belongs not to Resisting but the category of Moving Against. This is the most direct and least subtle form of attack on the teacher. Moving against is seldom as content-oriented as resisting and cannot sustain the illusion of containing nothing more than an intellectual disagreement. It is intended to be more personally felt by the teacher and thus raises the posibility that he might retaliate. For these reasons, it most often occurs in very short bursts. It is most frequent at the beginning of the term before people know each other well enough to assure themselves that subtler messages can be sent and received.

Occurrences do exist later in the term, but tend to become increasingly indirect or to attack symbolic equivalents of the teacher (fathers or psychologists or old men) rather than to the teacher himself.

The other negative impulse category with a significant loading on Challenge is Guilt-Inducing. As we noted when Guilt-Inducing made an earlier appearance as part of Anxious Dependence, it is usually an attempt to sway a figure who is perceived as vastly more powerful. We do not find the students stressing their equality here as they do in Contention. Instead, we can see an internal strain betweeen the guilt-inducing which implies a feeling of inferiority and the counterdependency that denies it. This inconsistency is another reason that Challenge is never sustained over a long period. Rather it takes the form of a fleeting often spontaneous side act with even less readiness than we found in Contention to follow through to any program for change. If Contention suggests an opposition speech in parliament by a member of a minority party, Challenge presents us with a picture of a solitary anarchist sneaking into the gallaries, firing a wild shot, and dashing out the door.

Since Challenge is so little oriented to specific details, the teacher is likely to be hard put to find an appropriate response. Criticism may seem witheringly strong, and it is often hard to pinpoint what, exactly, the students object to. The teachers' responses to such global threats vary in nature. When they are aimed at symbolic equivalents for the teacher, e.g., fathers, he has the alternative of bypassing the hostile message and blandly agreeing with the negative assessment of the person or group in question. But when the attack is more directly personal, this is impossible. Our sample of four teachers showed some degree of interindividual variation in responses to direct challenges. One common response is retaliation in kind, an attempt to squelch revolt then and there before it can really get off the ground. A second is an attempt to question the attacking student further, to draw out both his true objections and their inconsistencies, and then deal with them openly. A third and not uncommon response and one prominent in the Apprehension factor, is simply withdrawing, turning to some other after only minimally acknowledging what has been said. A fourth response is to attempt to vitiate the strength of the hostility by laughing it off or treating it as a friendly kidding.

This, then, is the picture of challenge. A student is feeling wronged, unhappy and powerless. He nurses these feelings, perhaps until he perceives an intellectual slip or an obvious abuse of power. He then attacks suddenly and quickly subsides, after which the teacher usually attempts to continue the class with as little disruption as possible. Typically, we find no substantial confrontation, only a lingering hint of dissatisfaction and threat.

Some Challenge segments:

1. Mr. B decides to cut short a class discussion to summarize the results. He compliments the class, calling the discussion "wonderful, just wonderful," but explaining that he wants to summarize results in case anyone got left behind. Doug raises his hand to say, "I don't see where you think that was such a good discussion. I thought it was horrible." The teacher begins to ask for specific objections, then changes his mind and

says, "We don't have time for that now. If there are any more objections, just write me a note. You don't have to sign it."

2. Mr. D asks for comments and questions on a lecture from the preceding day. Eugene remarks that the lecture seemed to him to be poorly orgnized, irrelevant, and lacking continuity. The teacher aswers that he was looking for more substantive comments and that Eugene probably misunderstood the lecture, anyway. "Maybe," Eugene mutters resentfully. Mr. D then turns to some other topic.

3. At the beginning of an early session, Mr. D asks for opinions of a film on autistic children. When Dave and Jane seem confused, he defines autism and symbiotic behavior, then reports his shock at some symbiotic behavior exhibited in the film. Morton argues "Yeah, but the boy was completely autistic when he came in. What we saw was a great improvement." Further discussion reveals that Morton has worked with such children and knows rather more about them then does Mr. D. The teacher turns aside what he seems to consider a threat to his leadership by accepting the information Bernie has conveyed, but belittling its importance. Then Audrey begins angrily condemning the hospital in the film for allowing autistic children to spend their nights at home with the same parents who were largely responsible for the children's conditions. When Mr. D attempts to point out that it is legally impossible to keep children from their parents in most cases, Audrey remains angry and unimpressed, sounding almost as if she blamed Mr. D for this state of affairs.

4. After Hank has returned from the racial troubles in Selma, Alavama, the teacher initiates a discussion of the wisom of non-violent tactics. A number of male students advocate a violent stand and an end to dependence on the federal government. Mr. C, for his part, keeps pointing to the likelihood of violent retaliation to such actions. The males play down this possibility.

"What would you do if the state troopers were bearing down on you on their motorcycles and you had no weapons?" Mr. C asked.

"We could throw rocks," Neal suggests.

"Listen, you just don't seem to realize that you could get murdered," the teacher counters. "You don't think you can get hurt."

Student Factor VI

Support	Unresponsiveness
major positive loading	major negative loading
accepting	withdrawing
minor positive loading	
moving toward	

The positive pole of Student Factor VI finds the students expressing support for the teacher's person and policies. The factor pattern includes a great deal of Accepting, most of it quite active, and a smaller loading on Moving Toward. The students are responding warmly and positively to the teacher and the various aspects of the role he plays.

Such a performance may be excited by a number of events. One is the attempt of several students to disassociate themselves from the carping of one or two members. Another may be the teacher's direct request for feedback on some issue or decision. Alternatively, the students may pick up from the teacher's manner some trepidation about whether some course of action he is pursuing is popular, or even whether the students consider him to be a potent or likeable person. In many such cases, class members often jump in with statements of support and legitimation for the teacher.

Still another possibility is simply that a large number of students agree with the validity of some intellectual position or the wisdom of some procedural decision and defend it against some resistant member. Finally, support may come spontaneously as an expression of warmth and respect built up in the source of the term's association.

Many segments which score high on Support make obvious the underlying goal of winning the teacher's approval by appearing to be on his side or to be his kind of person. The expectation is that the teacher will feel more favorable to those who place themselves in agreement and help to legitimate his power, especially during the early phases of the term when he is just getting to know the students and can use the support of specific members in strengthening his own confidence and in helping to set up a favorable educational climate in the classroom. Beyond the desire of some students for approval, we sometimes detect a symbolic wish to fuse with the teacher and share his power and charisma. The most salient antecedent for this situation is that of sibling rivalry within the family. The student attempts to get closer to the teacher than his less adept classmates.

Unresponsiveness, the other pole of the Factor VI, includes a distinct lack of support from the class. The teacher's plans and ideas are most likely here to meet with withdrawing, a passive refusal even to contend with the issues raised. Long silences follow the teacher's question; studen act sleepy and apathetic.

We may easily indicate a few of the situations in which students become unresponsive. Often, the class simply fails to engage the students' energy because they find it boring or irrelevant. The problem may be with the material, or their involvement may be blocked by an alienated reaction to the teacher. At other times, the material presented raises too much distress to seem worth dealing with. In all these cases, Unresponsiveness may involve a process as simple as avoiding replying to a question when one does not know the answer, or as complex as passive resistance to important elements of the classroom situation.

One of the attractions of Unresponsiveness for the student who does not feel like going along with the teacher's plans is that it calls much less attention to his personal resistance than does a contentious response. The students may undercut the thrust of the teacher's actions while appearing fairly innocent and avoiding any true confrontation. Moreover, moving away when the teacher tries to initiate something is a very effective weapon in that it usually causes the teacher to feel depressed and leaves him no easy way to fight back. The teacher is exposed, but the student is not. As one of our sample of teachers says in the transcript reproduced in Chapter 9, "Don't you know that the worst thing you can do to a teacher is to sleep in his class? I'd rather have you come after me with a gun than sleep in my class."

Unresponsive students seem to perceive the teacher as very powerful. Dependency and Enactment are both ruled out by his injustice, incompetence, insensitivity, or irrelevance, and Contention is also blocked by students' perception of his superior power. Unresponsiveness presents itself as an alternative in these cases. It gives the students only a negative say over what happens in the classroom, but it does give them this veto power while leaving them in comparative safety.

There is one problem with this formulation in that a low score on this factor does not always mean that the students are refusing to deal with the teacher statements. It may indicate instead that the teacher is not saying anything for the students to deal with. Often in one of our four classrooms and occasionally in another, discussions among students continue for long periods without interference from the teacher. In these frequent cases, a low score on Factor VI indicates that the students are failing to respond. In the large majority of cases, however, such stimuli do exist and are met with coolness and apathy.

A Support Segment:

1. Mr. B has recently given a test in which he told the students what the questions were to be well in advance. Amy and Beatrice complain that this method provoked tremendous anxiety. After the teacher responds with some depression that his intention was actually to reduce anxiety, several class members come to his defense. They praise the procedure on the grounds that it elicited more depth of though than a regular hour test, that it was less work and worry than a take-home exam, and that they were spared restudy of irrelevant material.

Some Unresponsiveness Segments:

1. Mr. A asks who would like to moderate a discussion about the novel Lord of the Flies. When no one answers, he appoints Frank, who asks for comments, but find none forthcoming. "Don't all speak at once," he cautions. Eventually, a halting discussion begins. At one point, the teacher asks how the class would feel about trying to equate the characters in the novel to subsystems in the personality, taking Jack to equal the id, for example. A long silence ensues, broken temporarily by one boy's rather irrelevant comment, then resuming.

2. During a long argument concerning the grading of a multiple choice question, Mr. C attempts to bring the students to express directly some of the personal feelings surrounding the conflict. Brad, one of the most bitter contestants, reacts with the disclaimer "I was just trying to pick up a few extra points, that's all."

Student Factor VII

Exhibition

major positive loadings	minor negative loading
expressing self-esteem	dependency
moving toward	

Our final student factor, like many factors for both students and teachers, occurs primarily in the early part of the term. Students enter the classroom with a large variety of available strategies and responses, a number of which will soon drop in importance because they are ineffective in the developing classroom situation. Exhibition is one of the best examples of such a response. Students typically display it once or twice, then decide it isn't accomplishing anything, and stop using it.

The motive of the student engaging in exhibition is to identify himself with the teacher, to win the teacher's implicit praise and friendship, to distinguish himself from the mass of his indifferent classmates and to receive special favor. His strategy for gaining this desired state is to show off how smart and competent he is, how well he understands the subtleties of the teacher's views. Once he has established that he is practically the teacher's peer and colleague, he can more directly court him with actions which are usually scored as moving toward.

In doing all this, he has attempted to distinguish himself clearly from his potential rivals in the classroom and set up an exclusive relationship of mutual respect with the teacher. He presents himself as quite above the sniveling dependence exhibited by some classmates or the troublesome Contention of others. This attempt has evident antecedents in familial sibling rivalry and, later, in classroom situations from previous educational experiences. As the student's first task in distinguishing himself is to assure himself of attention, students displaying Exhibition may often be found talking at great length to gain this attention.

One problem with this strategy is that its failure can leave the student in a very precarious position. He has counted on the support and protection of the teacher. In courting it, he has had to some extent to forego seeking the support and friendship of his classmates. If the teacher fails to respond to his courtship, he will be left exposed and deserted. For this reason, the first act of Exhibition may be rather guarded and tentative. If it fails to gain result, the student may quietly remove himself from the spotlight or try to erase his image of a hopeful teacher's pet by radically changing his mode of activity. Those of his classmates who were themselves considering trying this strategy may note his failure and become less likely to employ it themselves when a future opening arises.

Like many of the early strategies that students and teacher employ, Exhibition has a rather magical quality to it. The feeling seems to be that somehow, by means of a few easily performed acts, one can herefore assure himself of a favored position within the classroom. Teachers often appear to display a similar belief in the factors of Warmth and Display. The teacher seems to feel that, provided he can win the students' friendship and admiration at the outset, the term's success is assured. The effectiveness of such magical attempts to fulfill such hopes leads to their sharp decline with the passage of time.

Exhibition does appear in scattered acts later in the term, but in a much changed form. Members of the class may now display behavior falling into the categories of self-esteem and moving toward as a celebration of a job well done. The students may, by this time, have established more solidarity, and one student may express pride on behalf of the whole class achievement. In contrast to early acts of Exhibition, these celebrations typically follow the teacher's praise instead of being a ply to win it.

Some Exhibition segments:

1. To illustrate theories of conditioning, the teacher has initiated a discussion of how he learns the names of students. He asks the class to provide some ideas of mechanisms whereby he learns their names.

> Robert's answer is: "If you happen to know someone else in previous experience with the same name, say you had a very close friend whose name was Robert, you might learn my name first, or something like that."

2. Roger is leading a discussion about the book Jordi. The class is bogged down over the issue of why Jodi became schizophrenic, with Roger offering a number of ideas. Mr. B remarks that the book gives very few clues to the genesis of the schizophrenia and is much stronger on the description of it. "It certainly is an intriguing question, though," he notes.

"I know," says Roger, "I've been trying to figure it out myself."

3. The teacher has been profusely complimenting the class on their stellar performance on some assignment.

Mr. C: Really, they were very good. Very, very good. How did you find them on the whole. Were they tough?

Nancy: Oh, very simple.

Class: Laughter.

Mr. C: It was really very good. I could see you put a lot of work into them.

This completes our description of the seven student factors. We have attempted, thus far, to explore the dimensionality of the feelings expressed by teachers and students. Each of the two separate analyses resulted in a seven-factor approximation to what is undoubtedly a far more complex reality, but now we may proceed to ask a deceptively simple question: How do the feelings and behavior of the teachers relate to the feelings and behavior of the student?

To say that the question is deceptively simple implies, among other things, that one can rush off and attempt to answer it with easily available data and easily defensible statistical manipulations of the data. So let us do just that. The first answer need not be the last.

It is a simple matter to describe both the teacher and the class, aggregating all individual students, in terms of their scores on each of the member-leader categories. One can transform the raw frequency distribution across the sixteen categories of the teacher's and then the class' acts into estimates of the teacher's and the students' scores on each factor. Armed with the factor estimate data for four teachers in a total of 156 sessions and for the students in the same sessions, it was a simple procedure to intercorrelate the seven teacher factors with the seven student factors. If we ask whether, in general, the resulting 7x7 matrix suggests that we are dealing with correlations which could have been produced by using random numbers instead of our observations, the answer is encouraging--assuming one hopes to find some systematic relationship between what the teachers are doing and what the students are doing. Almost half of the correlations are significant at the .05 level, nearly a quarter at the .01 level. Evidently, we may move on to the particular significant results with some confidence that teacher and student behavior are interrelated in a non-random fashion.

Despite the fact that correlations tell us nothing about whether x "caused" y or y "caused" x, or maybe both covary with "cause" z, it is hard to resist looking at the correlation matrix as if it could tell us something about the "effect" of this or that aspect of each party's behavior upon the behavior of the other party. So let us not resist that temptation entirely, especially since we have other ways of pursuing the conjectures derived from this examination of the data. We will start with the teacher, treating his factor scores as pseudo-independent variables, and ask what the students are up to when he is high or low on each of the seven teacher factors. Then we will turn it around the other way.

In Table 2-3 we have listed the student factors, in order of the magnitude of the correlation, which are related to a given teacher factor at the .05 level of significance or beyond. In each case we have shown both poles of a factor and its correlates in order to permit the reader to trace out connections which might be obscured by the more economical mode of showing only the sign of the correlation between a teacher and a student factor. Teacher factor I opposes Reaction, which signifies a responsive but low activity style, to Proaction, which involves lecturing primarily, with overtones of dominance and a sense of sharing with the students a common investment in the content material. What difference does variation along this dimension make in terms of student behavior? The fact that Reaction is associated with student factors I+ (Enactment), VI+ (Exhibition,) and III+ (Concealment) suggests a complex effect, if effect be the proper word. On the one hand, student enactment of the teacher's role increases when the teacher permits discussion, whereas lecturing is associated with more anxious, dependent behavior on the part of the students. On the other hand, the teacher's low activity and more responsive style seem to trigger off behaviors associated with the personal closeness of the teacher. The correlation with Concealment suggests that some students become defensive and guarded under these conditions; others (but we can only surmise at this point that it is others) seem to seize this opportunity to present themselves in a good light, and hence the association between teacher Reaction and student Exhibition.

No other teacher factor is as closely related to the seven student factors as factor II, Role satisfaction vs. Role dissatisfaction. When the teacher is high on showing dominance and low on depression, either expressed or denied, and overt aggression, i.e., high on Role Satisfaction, the students are high on Enactment and Consent and low on Discouragement, Challenge, Concealment, and Exhibition. This pattern of high and low factors paints a very attractive scene. The opposite scene, the one associated with Role Dissatisfaction sounds like a teacher's nightmare! Anxious dependence, Contention, Concealment, Discouragement, Challenge, and Exhibition.

Nothing further is gained by putting into prose form the additional findings contained in the Table. Table 2-4 turns the data around, showing what factor patterns characterize the teacher when each of the student factors is high or low. As with the previous table, it is tempting to construct casual statements, for example, "Student Challenge causes teacher Apprehension," or "Student Enactment causes teacher Role Satisfaction." The sad truth, of course, is that statements which simply reverse the causal direction are not less compelling. Perhaps the teacher's Apprehension "causes" the students to be more challenging.

What do we learn from these correlations? Perhaps the most useful, or at least the most encouraging, aspect of these results is the beginning of some sense that the feelings and actions of the participants are not totally unrelated. At least we have a first indication that, as measured by the scoring system and then assembled in terms of the factors, there is a demonstrable covariance between what the teachers and the students are saying. The second upshot of these findings is that, at least in a preliminary way, we can begin to raise some interesting questions.

We find that Teacher Role Satisfaction is associated with student Enactment, but student Enactment is also related to teacher Reaction. At this point we may ask: Does student Enactment go with teacher Role Satisfaction at the same point in the group's history as it goes with Reaction, or are the two positive correlations reflecting different phenomena at different phases in the group development? And why is teacher Reaction, indicative as it is of a discussion style, related not only to Enactment but to Exhibition and Concealment? Are these different or simultaneous events? This class of questions takes note of the time dimension which is temporarily obscured by the statistical summaries. Still other questions may be raised concerning another natural characteristic of the data which these correlations have obscured: the fact of individual differences.

We would like to answer questions such as these: Do all students become anxious and dependent when the class is faced with a teacher who is lecturing, or is the significant correlation over all students obscuring variations worth noting? Similarly, if the teacher's Apprehension is related to Challenge, Concealment, and Anxious Dependence on the part of the students, are we to conclude that some students are high on all three factors at that time or that different students react in quite different ways? If the latter were the case, we could still obtain significant correlations with all these factors, but we would not have to conjure up the simple image of a student who was simultaneously challenging, concealed and dependently anxious.

Four chapters later in this book will return to the questions raised here. Two chapters will present case studies of single groups, one will examine the interplay of student and teacher behavior over time, and one will view student-teacher interaction via the analysis of work and anti-work strategies descriptive of the classroom as a system.

Table 2-3

When the teacher is characterized by

	I		II	
	Reaction	Proaction	Role Satisfaction	Role Dissatisfaction
The student is characterized by	Enactment Exhibition Concealment	Anxious dependence Low Exhibition Low Concealment	Low Discouragement Low Challenge Consent Low Exhibition Enactment Low Concealment	Discouragement Challenge Contention Exhibition Anxious dependence Concealment

	IV Punitiveness	V Apprehension	VI Display	VII Warmth
The students are characterized by	Concealment Contention Discouragement	Challenge Concealment Anxious dependence	Support	Low Discouragement Exhibition Low Challenge

Table 2-4

When the students are characterized by

	I		II	
	Enactment	Anxious Dependence	Consent	Contention
The teacher is characterized by	Reaction Role Satisfaction	Proaction Role Dissatisfaction	Colleague Role Satisfaction Low punitiveness	Formality Role Dissatisfaction Reaction

	III	IV	V	VI
	Concealment	Discouragement	Challenge	Support
The teacher is characterized by	Punitiveness Low Warmth	Role Dissatisfaction Apprehension Low Warmth	Role Dissatisfaction	Display Role Dissatisfaction Warmth

	VII
	Exhibition
The teacher is characterized by	Reaction Role Dissatisfaction Warmth Punitiveness

Methodological Footnotes - Chapter 2

1. The procedure for pooling the data from the four different groups was to (1) calculate the percentage of all acts in each category for a given 20-20 segment; (2) convert the percentages into standard score form for each group separately with means of 50 and standard deviations of 10; (3) combine the pool of 20-20 segments from each group into one large pool of 582 segments. Since our interest here is determining the covariation among categories within these or any other such groups, it is essential in studies of this kind to eliminate extraneous covariation of two sorts: (1) covariation attributable to the different rates at which scorers would perceive, had they scored all four groups, each of the sixteen categories and (2) covariation attributable to across group variations; for example, if one teacher were extremely high relative to the other teachers on Showing Dominance his percentages would tend to be lower on all the other categories even though for him (and for all the other teachers) Showing Dominance might be positively related to at least some of these categories. Only by standarizing within groups will these positive correlations be clearly revealed.

2. The factor extraction procedure used was the principle axes method, using an iterative refactoring technique for arriving at communality estimates. Seven factors were then rotated using Kaiser's normalized Varimax technique. The rotated matrices are found in Table II-1 and IIF-2.

3. The factor estimates for the teacher or for the students on their respective set of factors were created by: (1) calculating the standard score values within the array of segments for each group for each of the categories (plus %T for the teacher) for each segment; (2) the appropriate categories were then added together (with appropriate sign) and major loadings were given double weight and; (3) the resultant sums were then standardized for each factor (with means of 50.0 and standard deviations of 10.0) and within each group, with the result that each segment was assigned a standard score on each of the seven teacher factors and each of the seven student factors.

V - 3: Case Study of the Developing Classroom

The teacher confronted by the reality of a group of young persons designated as his students is often faced with a dilemma. He wants to engage in certain desired activities, to establish certain desired relationships and to attain certain desired goals, all of which make up his picture of the learning process. However, he often finds that some of his students do not easily engage in those activities, these students and others do not contribute to or they resist the establishment of those relationships, and these students and others do not as readily share those goals. In addition, the teacher often finds that his conception of what for him would be a compatible set of activities, relationships and goals in practice is not so internally harmonious. It is not as easy as he thought to translate his conception into an integrated style of behavior, i.e., an integrated set of roles vis a vis the students. No sooner does he turn his attention, for example, to engaging the students in his desired activity, then teacher-student relationships begin to deteriorate; while concentrating on aiming the class toward his goals, ongoing task activity gets bogged down in what he feels is unproductive behavior. The teacher in attempting to keep all the elements of his conceptions of the learning process operating smoothly often feels as frustrated as if he were trying to keep too many coins simultaneously spinning on a table.

Between and during class sessions the teacher usually takes some time to think about what is going right and wrong with his class. If things are going well, chances are these questions will revolve around how to continue with more of the same. If things are going badly more of the same will not suffice, and the biggest questions will be: Where am I going wrong? What exactly is going wrong? Strains can occur between the teacher's conception of the learning process and the conception or conceptions of his colleagues or the general teaching culture of which he is a part. Strains can also occur within his conception of the learning process, i.e., between the various roles that make up his style of teaching. Strains can also occur between his expectations for and modes of relating students and their expectations for and modes of relating to him.

Each student also comes into the classroom with a conception of the learning process which contains potential sources of strain similar to those of the teacher. For example, his (or her) conception of the learning process may be incompatible with that of the majority of students in his class; the relationship the student establishes with the teacher, predicated on the former's desire to get tangible rewards from the latter, is not the sort of relationship the student felt he really wanted. In addition, he has certain expectations about his relationship with the teacher which are colored, in varying degrees, by his relationship with other important persons in his life, especially authority figures. These influences intensify pressures the student feels to establish hoped-for relationships with the teacher. However, they also tend to confuse the picture of needs, wishes, fears and expectations that the student presents to the teacher, and makes it very difficult for the latter to respond to the student in any consistent fashion. The sources of strain developed as teacher and student come together are also the ingredients of the potentially successful teaching-learning interaction. Success depends on how well teacher and students are able to work out between them the sorts of relationships that will blend and integrate their various motivations and expectations into a productive working arrangement. This working arrangement includes the development within and between individuals of ways of handling strains and tensions that only minimally impede the work process.

The purpose of this chapter is to illustrate the rate of work in one classroom. The chapter is really a short story about the meeting of a teacher and a group of students. It is also a history of the development of the relationships between teacher and students and how these relationships facilitated and impeded their attempts to establish a work arrangement. We are focused more on the stresses and strains in the teaching-learning interaction than on how their components are manifested in successful work. This was not our conscious intention nor was it, we believe, because this class was atypically turbulent. Rather, it seems to us that work is like a hue in the color spectrum; it is a result of the integration of different wishes, fears, needs and expectations, like the blending of different primary colors to make a certain hue. The majority of time and energy in the teaching-learning interaction appears to be spent in attempting to establish a successful work process, and even when it is established it quickly becomes subject to new stresses and strains and must be reestablished all over again. To continue the color analogy, when a new color is added to the blending of colors that produced a certain hue, this hue is lost and must be established anew. Through this case history we hope to provide concrete illustrations of the ingredients that make up the teaching-learning interaction, the attempts of both teacher and students to blend these ingredients into a successful work process, and the obstacles within and between the participants that impede these attempts. We also wish to show how through the use of methodological tools, specifically teacher and student factors, important aspects of the teaching-learning interaction can be submitted to systematic analysis and explication. However, the teaching-learning interaction, as will be attested to by most teachers, is composed of an extremely complex set of interrelationships. Consequently, even with the analytic tools we have only an entrance has been made into the manifold world of the classroom. In examining the effects of teacher-student interactions not infrequently there was no cause and effect sequence to be seen; rather, teacher and students appeared to be entwined in a matrix of forces created by the variations in their fluctuating interrelationships. Still, we hope that at the very least this chapter will provide an illustrative background of and stimulus for thought about the nature of work, as a prelude to the more theoretical discussion of work in Chapter

I might repeat that we do not feel that the classroom described was atypical. This class was one of several discussion sections of a large introductory psychology course. It contained 25 students: 14 male and 11 female. Their instructor was an intelligent teaching fellow with a term of teaching experience behind him. We think his views on teaching were thoughtful and widely held. Through our interviews with him we found that his goals were to foster independence and critical thought in his students and to help them become motivated to learn through interest in and respect for the material he presented and the manner in which he presented it. He intended to focus on the middle region of students, in terms of motivation and intelligence, as long as it didn't inhibit his best students. He felt that a minimum of affect arousal and a maximum of task-orientation was better for learning. Similarly, he believed that what his students felt about him -- their relationships with him -- were secondary to the task activity in which he attempted to engage them. Mr. D's ideal teacher was relatively impersonal with equal skills in lecturing and discussions. Mr. D fit his ideal very well. He generally combined lecturing and discussions and emphasized his desire for independent student contributions. His choice of topic material was standard for this introductory psychology course. If anything the particular topic choices reflected his bent toward the natural and physical sciences. While there were the usual introductions to motivation, attitude formation and change, Freud, etc., there were also many sessions spent on topics like ethnology, perception and cognition and information theory. He spent a good deal of time at different points during the term discussing grades and implying his reliance on them as an evaluator of student achievement.

With this introduction to the class we can make our entrance. We did so through an analysis of groups of sessions in which particular combinations of teacher and student factors were markedly salient. We called these groups of sessions "phases" and constructed five of them composing the 39 sessions of this class. Our narrative will proceed by discussing each phase in turn. Within each phase we will approach the data from several different viewpoints. There will be a brief overview of the content within the phase, including material discussed, key events and the prevailing tone or tones. Next we will summarize those factors which showed a marked upward or downward movement in the phase. Next we will make an in depth analysis of the meaning of the salient factors in terms of what is going on in the class, e.g., the teaching-learning interaction, the teacher-student relationships. We also will present excerpts from the ongoing classroom dialogue, when such excerpts provide good illustrations of the factor being discussed. We will then turn our attention to individual students who were found to provide specially relevant characterizations of the meanings of student factors within the phase. We did this because the teacher factors always described one person, but the student factors had to characterize a relatively large group of persons who while similar in many ways were obviously different in many other ways. Consequently, when we could find an individual who provided a particularly clear and accurate illustration of a student factor we looked at him more closely. Finally, we will close our examination of each phase with a brief summary of where we have been.

PHASE ONE

Phase Overview

The first and shortest of the five phases included sessions 1 - 3. It was characterized by the first uneasy meeting of teacher and students.

They didn't know each other yet, and their feelings about what this particular class would be like were still predominantly colored by the expectations and fears arising from their personal histories and experiences with teaching-learning interactions in the past. Mr. D assured the students that he wanted to make their interactions with him a "dialogue;" however, several events in this phase suggested that he was caught between a feeling of impatience with the students over their not responding quickly and adequately enough to his expectations of a dialogue, and a feeling of uncertainty about how much authority he was willing to relinquish and how personal he was willing to get with the students in the interest of starting a mutual interchange. Mr D indirectly presented his own standard of excellence with a short but impressive introduction on the theory and mtehod of science, relying heavily on examples from the physical sciences and Greek protosciences. In the discussion that followed he generally evaluated student contributions as not really adequate but excused them with an evocation for harder work in the future. However, his anger and disappointment was growing and these feelings were aggrevated by a mixup at the library which he blamed on the students. From the beginning Mr. D stated that his relationship with the class wasn't developing as he had expected. Yet, his own discomfort with the situation left him unwilling or unable to approach the students in an effort to discover what was wrong; rather, he seemed to be putting a barrier of task activities between himself and his students. He seemed to be demanding that the students salvage the beginning of their relationship through meeting his task requirements, even though it was apparent that the students weren't certain about what he expected of them and hoped that he would benevolently lead them through the early periods of this new situation. This discrepancy in expectations resulted in some explosive moments. For example, in reaction to a look of uncertainty as Lisa attempted to answer a question, Mr. D said: "Answer! Don't try to read my face!"

Factor Summary

Table 1*

Teacher		Students
I		
II-	Role Dissatisfaction - hi	- Contention - extended spurt
III		
IV+	Punitive - Early spurt	+ Discouragement - hi
V+	Apprehension - rising	+ Challenge - spurt
VI		
VII		+ Exhibition - rising

*Each table consists of an ordering of all possible teacher and student factor numbers. A factor sign and label are included only when that factor's scores in the phase described are high enough to be discussed in the phase analysis. The (+) or (-) sign indicates which pole of the factor is being discussed. The sign of the factor refers to the factor pole; the label refers to the behavior observed.

In the first phase three factors characterized the teacher's feelings about and relations to the class. Mr. D's high scores on II - Role Dissatisfaction indicated his tight grip on the reigns of authority in the class. They also reflected his disappointment with the failure of a mutual interchange to develop which, perhaps, both indicated and reinforced his growing dominance. In reaction to his dissatisfaction the early spurt of high scores on IV+ Punitive reflected Mr. D's attempts to blame the students for the problems being encountered, not the least of which was his growing dominance. He accused them of failing to satisfy not only his requirements but also the conditions of the larger system (i.e., psychology department, university, parents). However, his attempts to place the burden of guilt for the class's problems on the students was not completely unsuccessful. His high scores on V+ Apprehension reflected Mr. D's growing concern about his relationships with the students and his attempts to avoid facing that disconcerting situation by preoccupying himself with task activities.

The four student factors salient in this first phase reflected the students' welter of mixed feelings about their first encounter with Mr. D and their various attempts to cope with the new and uncomfortable experience. The extended spurt of II- Contention reflected their response to Mr. D's reliance on task activities in forging teacher-student relationships. The task quarreling characterized by this factor represented the students' vehicle for sending Mr. D the confusing message both for more freedom and more benevolent guidance. Their spurt of high scores on V+ Challenge suggested that the students were, in fact, not happy with the way things were going, did not see it as merely the result of inadequate task behavior, and were ready to place the blame on Mr. D for not establishing satisfying relationships with them. However, the gradual increase of student scores on VII+ Exhibition suggested that they still felt confident in their ability to meet Mr. D's requirements and to establish a staisfying relationship with him. Even with this optimism, however, the high scores on IV+ Discouragement in this phase reflected the students' acute awareness of the discrepancy between their knowledge, skills and power and those of Mr. D. Consequently, at this point they were uncertain whether it was really possible for them to gain his approval and they felt, perhaps, that it would be safer to concentrate on avoiding his disapproval.

Analysis of Phase One

As we move into a sequential analysis of factor fluctuations we find that Mr. D's high scores on II- Role Dissatisfaction early in the phase reflected the initial impact of the discrepancy Mr. D felt between his expectations and goals for the class and the students' expectations and goals. By "snowing" and amusing the students, Mr. D hoped to involve them in the learning process through their seeing him as competent and interesting. Mr. D visualized a task-oriented and impersonal role for himself, which reflected his educational philosophy and his view of a comfortable relationship vis a vis the students. He conceived of his class running on the stimulation of a highly active, intellectualized meeting of minds. However, he was immediately confronted by, for him, a disconcerting array of student expectations, needs and fears. This confluence of student feelings and behavior -- e.g., dependency, resistance, enthusiasm and inactivity -- posed immediate obstacles to many of Mr. D's goals. He reacted with anger toward the students and with attempts to avoid the feeling of helplessness both at being pulled into uncomfortable personal interactions and at being, as he saw it, forced to assume more and more control and responsibility. Mr. D seemed uncertain whether he could avoid these trends and still facilitate student productivity. The direction he initially took to escape from the conflict was to be liked as a stimulating but impersonal authority. When the students didn't respond this way, Mr. D was extremely dissatisfied.

The background scores of IV+ Punitive reflected instances of guilt inducing and moralizing by Mr. D. One way of handling his initial disappointment over the students not living up to his expectations was to see it as a result of their naivety and lack of ability. At this point picturing the students as not manifesting the skills and enthusiasm that the larger system expected and desired took the focus of rebuke at the students off himself and thereby decreased the chances of overt personal antagonisms between him and the students. However, in search for remedies to the immediate impediments to effective task activity he was not sure all the blame rested on the students. Consequently, Mr. D occasionally shifted gears and in reparation told the students that he too was once a student and understood the difficulties in acclimating to a new course.

The students were also disappointed. Their high scores on II- Contention reflected the students' resentment at what they saw as Mr. D's unfair accusations and coerciveness. They quickly were aware of the contrast in power, authority and wisdom between Mr. D and themselves, and they felt burdened with a sense of dependence, weakness and naivety. Yet, the newness of the situation fostered a feeling of opportunity for the flexing of potentialities, which students at this age engage in so energetically. Consequently, the students desired more leeway in what was considered acceptable performance and greater freedom in the running of the class. There was no direct rebellion against Mr. D; rather, the students initiated their first confrontation with him through angry task quarreling and symbolic accusations expressed in task discussions. For example, when Mr. D accused the students of mishandling a library assignment, Morton retorted, saying: "I asked for the Rhine reading, but they said that they sent it back to the shelf. It wasn't there either. That was yesterday evening." While resistances to Mr. D's accusations could take this relatively direct form, the students' anger at him and the consequent aggressive images evoked could be expressed only in indirect -- and often defensively humorous -- forms. During the discussion of the scientific method the students were asked to show ways they would test a hypothetical assertion from phrenology, stating the relationship of the location of bumps on the head and what the students thought Mr. D had called "inquisitiveness." Eugene began giving an answer involving the use of a friend and trailed off:

Mr. D:	Yeah, okay.
Eugene:	That isn't too practical.
Robert:	You can give him a bump.

The students picked this indirect way to evince their expectations, needs and fears because they felt that this was the safest way at first. Also, the students probably felt that through engagement in task activities and the development of task relationships Mr. D would get to know them better. However, they felt that Mr. D was not giving them a chance to be heard even on this level. Consequently, the students were concerned that they would never have a full opportunity to display their skills and to have them appreciated. Still, in these early sessions the students saw many opportunities before them. Their background scores on V+ Challenge reflected a growing feeling that there was room to establish hoped-for task roles and to achieve desired task aims. While Mr. D was trying out different ways of relating to and dealing with the students they too were searching for ways to deal with him. Mr. D was demanding certain things of them; they were also increasing their demands on him to be more understanding of their failings and to be more empathic when making demands on them. While Challenge reflected the students' desire to fight for what they wanted, their high scores on VII+ Exhibition indicated their optimism about the chances of establishing an affectionate relationship with Mr. D. While the types of relationships people desired varied tremendously here, this pole characterized students who desired a comradeship with Mr. D and wanted to show that they could be counted on to support him.

Even with the background of student optimism Mr. D saw many reasons for being disenchanted with this class, not the least of which was an aggravation of the entire situation by what he saw as the students' unwarranted fears and demands. His background scores on V+ Apprehension reflected Mr. D's growing anxiety over the strains he felt in the classroom and his own uncertainty about what to do about them. His dissatisfaction with himself and with his students caused him to withdraw into greater reliance on task activities as a vehicle of expressing not only his task objectives but also his feelings about the students. This neither alleviated his misgivings nor lessened the strains on his relations with the students. Mr. D's preoccupation with the details of task behavior (e.g., information seeking and giving), in fact, resulted in more authority being drawn to him than he wanted or felt comfortable with. In short, his delimited view of the teaching-learning interaction merely put the interpersonal strains off and allowed them to simmer within task activities.

The students were also growing increasingly concerned about their relationships with Mr. D. Their high scores on IV+ Discouragement reflected the students' distress over what they saw as Mr. D's abandonment of attempts to establish close relationships with them. While friendly relations were preferred even hostile interchanges could provide the interpersonal proximity needed to establish affectionate relationships. Now Mr. D seemed to be moving backward and upward to a position of authority out of reach of student overtures. Consequently, the students' feelings of anger and resentment were giving way to guilt feelings and the need to expiate them. The students felt they were driving Mr. D away. Furthermore, he was threatening when he pointed out their inadequacies and demanded that they do better, and now he was becoming less accessible to placations. They were both frightened of him and depressed over their inability to establish less threatening relations with him and consequently reduced the felt discrepancy between his power and skills and their own.

The students were too uncomfortable to engage in affirming their own potentials; rather, their contributions were directed toward gaining Mr. D's approval in the hope of alleviating the tension which they were experiencing. Their fear of Mr. D also accentuated normal dependent requests for guidance which occur in the early periods of the new classroom. The result was a great deal of self-blaming which at times became so blatant that Mr. D made amends for the arduous tasks which he felt he had set for them. A good example of the excessive self-blaming -- and consequent inhibition of the positive expression of student potentialities -- occurred during the discussion (cited above) of ways to test a hypothetical assertion from phrenology, stating the relationship between the location of bumps on the head and what the students thought Mr. D had called "inquisitiveness." Lisa responded to Eugene's idea of asking friends if they are inquisitive by saying that you need some objective measure of inquisitiveness. Mr. D then asked her how she would measure it.

Lisa: Possibly some sort of a test.
Mr. D: Like what? Go ahead.
Lisa: You couldn't go around asking and you couldn't judge for yourself by asking questions yourself...so give them a test.
Mr. D: Okay, like what?
Lisa: (in a frustrated tone) I don't know.

Closely following this interchange Leonard presented another idea:

"You could read them some sort of article then observe and see if they are interested and inquisitive enough."

Mr. D: No, no acquisitive.
Leonard: Acquisitive, I thought you said inquisitive.
Mr. D: Acquisitive.
Leonard: I'm sorry.

Leonard took all the blame on himself, even though the entire class including Mr. D had misunderstood each other. A little later Shirley contributed a way of testing acquisitiveness:

"You could look in their wallets and see how many things they have." In a pleading and defensive tone she quickly added: "People do that!"

Study of Individual Students

Before going into the next phase we are going to backtrack for a moment and take a more intensive look at a couple of students who best characterize the salient student concerns in this phase. Our interviews with the students were extremely beneficial in looking at what lay behind their behavior in each of the phases and particularly what were some of the intrapsychic concerns influencing their reactions to Mr. D. In Phase 1 Lisa scored very high on II- Contention and also relatively high on IV+ Discouragement. She was very pretty and frequently spoke rapidly and in an excited tone of voice. Our observations suggest that Lisa liked to engage in somewhat seductive, teasing games with this masculine and sexually attractive teacher. Mr. D was a mysterious and frightening, but highly attractive figure for her:

"He scares me...he makes you feel that you are stupid," and "he never smiles unless he's talking about psychology; he must have a deep love for it." These statements captured Lisa's feelings of inadequacy in the face of Mr. D's competence and her discouragement with this state of affairs. She saw him as a difficult teacher, expecting much from the class. Those statements also capture the special feminine opportunity to sexualize the potential threat from a strong male teacher and to transform it into a thrilling experience:

"(We) are very young, grasping in the dark, and he is trying to help us." Yet, at this point Lisa did not want to let her fantasies about Mr. D intrude too heavily on her classroom relationship with him. She wanted to keep enough distance to feel comfortable engaging in task activities with him. She said the teacher-student relationship should always be "strictly dealing with the classroom;" and that the students should respect and be "a little afraid" of the teacher. The teacher should always be on a higher level than the students because if he was a friend you would lose the incentive to work hard. As a female, Lisa was able to transform her feelings of weakness in the shadow of Mr. D's competence into a uniquely feminine trust in (or at least bond with) a strong male. Yet, she was an active even spunky person and was very successful in standing up to Mr. D and getting herself heard. But she made certain that she never let her feelings about Mr. D become identified too personally with her. They were always to be gleaned from her task activities. If Lisa was angry with Mr. D it showed in her resistance to something in the course material; if she was happy with Mr. D he had a strong supporter for his ideas.

Male students in responding to a threatening male teacher, of course, could not sexualize the threat without stirring up extremely uncomfortable homosexual fantasies. Consequently, their contentiousness was more strident than their female counterparts. While there were no males who scored high enough on this factor to present as a good illustration, our observations of the class and our interviews with the males suggested that they, too, were careful to bind their feelings within the ongoing task activities when engaged in behavior characterized by this factor. During those times both males and females had a sense of purpose as students that overrode their personal attractions and grievances toward their teacher. They still felt strong enough to maintain their roles as students and not succumb to the array of pressures that at other times forced them in to such actions as personal confrontations and fearful flight.

Esther scored very high on IV+ Discouragement. Although she was almost always silent in class in the interview Esther was vociferous and emotional. She sounded intelligent but was very self-deprecating and "pessimistic." She said that she feared doing badly in class and continuously compared herself to everyone. Along with her strong need to do well was the feeling that she was "inferior" in the class. Esther believed that Mr. D was an excellent teacher and intelligent but didn't know why she believed this.

She was also very angry at Mr. D because she saw him as a threatening figure who had the power to harm her and wouldn't let her get close enough to find out if he would or to convince him not to. Her tremendous respect and fear of Mr. D was mixed with criticisms of his being above the students:

"(You) can't communicate with him because he is aloof...(he is) above us and expects too much from us." Esther felt "bad" when Mr. D ridiculed the students for not knowing enough. She would like the teacher to "...command respect from the students but be on equal status with them."

Esther evidently felt extremely disturbed about her relationship with Mr. D and in fantasy turned to Morton whom she could respect and be comfortable with; he was the first student that came into her mind during the interview. The combination of discouragement in relation to Mr. D and her emotionally turning to Morton for comfort was interesting in light of her family history. She described both her father and older brothers as having forceful personalities and as having attained a great deal of success in the academic and business worlds. It is quite possible that Esther had developed a fairly acute sensitivity to and preoccupation with comparisons of her own achievements and the achievements and standards of important persons in her life. In this case the evaluations of her by a respected male teacher, who may have seemed more than superficially similar to her father and possibly to her older brother, could have had a stronger impact on her than was warranted by the actual situation. Although it was realistically important that Esther do well in her first psychology course since she wanted to major in the field, her preoccupation with being proven inadequate suggested that she came into the class with the perception of the teaching-learning interaction as another test of her precarious capacity to maintain any sort of self-esteem. Making one, if important, course a major influence on her self-esteem was understandable if Esther unconsciously equated this situation, and particularly Mr. D, with a host of past situations both in and out of the family, which were important in the development of her self-image and self-esteem. Equalling the achievements of her brother and father in order to be worthy of their respect was probably extremely important to her. It is quite possible that Mr. D's similarity to them, in her eyes, accentuated the influence which her concerns about achievement have on her in any evaluative situation.

While the particular content was he own, Esther's concerns highlighted some fundamental issues behind IV+ Discouragement. The students whose reactions to Mr. D's threatening image of hostility, authority and competence were characterized by showing distress and feelings of inadequacy probably had backgrounds that made them acutely sensitive to threats to their self-esteem. While everyone can feel the pain invoked by blows to their self-esteem, not everyone reacts to it in the same way. For example, Lisa occasionally was discouraged but she felt strong enough to overcome her depressive feelings and to carve out an active task-oriented relationship with Mr. D. As we move into subsequent phases we will encounter other strategies used by the students both to cope with uncomfortable personal and interpersonal states and to take advantage of situations that are attractive and pleasurable to them.

Summary

Phase I began with Mr. D attempting to establish his conception of work based on an impersonal but stimulating intellectual interchange. He quickly became disenchanted with the students' response to his conception of work and reacted with some direct expressions of anger but primarily with appeals for them to meet the standards which he described as being set not only by himself but by the academic community and the adult world in general. Mr. D did this, in great part, to avoid direct personal antagonisms between the students and himself and to avoid the increasing dominance that he felt being forced on him. The students were also disappointed in the way their relationships to Mr. D were developing. They, too, were expressing demands for Mr. D to live up to their expectations and to satisfy the needs that they felt were pressing, including the contradictory wishes for more freedom and more guidance. In addition, they were also expressing a cautious optimism over the possible establishment of mutually satisfying relationships. However, like Mr. D, the major brunt of their demands were being expressed through task activities. Consequently, the interpersonal maneuverings between students and teacher and the uncomfortable feelings that were flowing between them were manifested in a great deal of task quarreling and general discontent with the entire work arrangement of the class. Mr. D's reaction was to begin withdrawing even further from emotional contact with the students and preoccupying himself with task details such as assignments, evaluation methods and the presentation of material. The students, in turn, were beginning to feel that all attempts at establishing good relationships with Mr. D and meeting his requirements were to be futile. The phase ended with both teacher and students attempting to involve themselves in task activities which they both felt as unpleasant and unrewarding. Their frustration with the entire learning process seemed, in great part, due to their attempts to dilute their personal confrontations by playing out these confrontations solely on the relatively impersonal level of task-oriented interactions.

PHASE TWO

Phase Overview

The second phase included sessions 4 through 12. During this time Mr. D put increased pressure on the students to meet his standards. However, this created a dilemma for him, which was the central theme of this phase. He was caught between wanting to stimulate the students into independent activity (e.g., spontaneous and critical thought) along with providing the supportive atmosphere for it; yet he ran the risk of destroying such an atmosphere by admonishing them for not living up to his expectations. Mr. D engaged in lengthy periods of casual, humorous and friendly lecturing. He attempted to coax out "intuitive" opinions where students felt they didn't have enough knowledge about a subject. At other times, however, he became very threatening when he felt he was falling into the trap of engaging only a section of the class. His reaction at those times was to directly attack those in the "back rows" for being too passive and inattentive. The students were also making demands on Mr. D, although to a greater extent than Mr. D they were expressed indirectly through task-oriented interchanges. These demands varied both over time and between students: There was the desire to be acknowledged as competent; there were attempts to impress Mr. D with correct answers and interesting opinions; there were pleas for guidance and support; and there was resistance to what some saw as Mr. D's attempts by disagreeing with their ideas to create a brood of obedient children.

Another theme that became markedly important in this phase was Mr. D's increasing power over the students and his discomfort with and uncertainty about what to do with it. These feelings were evident in his handling of the term paper assignment. He wished to give the students the opportunity to choose among several alternative methods of doing it, but ended up constructing the alternatives in such a way that all but the one he favored would leave the students at a great disadvantage in terms of the eventual grade received. With the two previously mentioned themes as foci, teacher and students increasingly expressed their feelings about and demands on each other through the course material being discussed. Consequently, themes in the course material that were relevant to the nature of the immediate interpersonal relations in the class were soon unwittingly connected by teacher and students in the task discussions. For example, during a discussion of Skinnerian learning theory using the example of the teacher learning student names through positive reinforcement, Mr. D was indirectly saying that if they did what he asked he would learn their names; that is, if they rewarded him with their attentiveness and activity he would reward them with recognition. Another example was the student's fear of the restraining forces of a coercive authority which emerged during a discussion of utopian societies, particularly Skinner's "Walden Two." A third explosive example, which ushered in the end of the phase occurred after a period where Mr. D had been particularly angry and the students particularly depressed with the latter's inability to understand some material in information theory approaches to perception. Mr. D had asked for some reactions to a course lecture attended by all his students. The lecture had dealt with sexual symbolism in the Cinderella fairytale and the students responded to Mr. D's request with an angry -- and somewhat defensive -- attack on sexual interpretations in particular and psychology in general. Mr. D's response to these attacks embodied his impatience with the students, his discomfort with the emotional climate and his position of authority and his tendency to withdraw from personal interactions into the formal structure of the teaching-learning interaction. He initially expressed his "irritation" at the students' naivety and then fell back upon the support of "empirical" evidence, the pressure of which effectively stifled any necessity for dealing with the relevance of the task discussions to the immediate nature of the teacher-student relationships.

Factor Summary

Table 2

	Teacher	Students
I+	Reactive-hi	(+Enactment-rising) -Anxious-Dependence-hi
II		
III+	(Colleague-rising)*	+Concealment-hi
IV		
V+	Apprehension-hi	+Challenge-hi
VI		
VII+ -	(Warmth-rising late) Low-Warmth-hi early	+Exhibition-falling from early spurt

In this phase the summary of teacher and student factors suggests a tone characterized by apparently energetic task activity masking strenuous -- and often anxious -- attempts by both students and teacher to deny the interpersonal tensions that were growing between them. Mr. D's high scores on I+ Reactive reflected his belief that getting into the course material would facilitate a more active dialogue and provide a vehicle for him to engage in the eliciting, clarifying and elaborating of student ideas and opinions; activities at which he was quite skillful.

In addition, this factor reflected his feeling that the students were still not living up to his and the larger system's expectations. Consequently, his behavior toward the students was a confusing mixture of appeals for student activity and apparent support for it; yet, when the students did respond they frequently encountered heavy and quite unsupportive criticisms. One result of this confusing set of messages was an increase in the students' expressions of distress and dependence on Mr. D. Mr. D's high scores on V+ Apprehension reflected discomfort with his increased power over the students because it was both inconsistent with his educational philosophy and suggested possibly aggressive manipulation of students' ideas and behavior. His reaction, as indicated by this factor, was to withdraw to an over-reliance on task activity in order to escape the implications of his perceived relationships with the students. Mr. D's high scores on VII- Lo Warmth set an important background tone for the teacher factors previously discussed. This tone was Mr. D's feeling that there didn't seem to be much that he could do to halt the disconcerting teacher-student relationships which were developing. He felt that he might have been contributing to them by being too critical of his students but he also felt that the primary determinants were their inappropriate task motivations.

---

*Factors in parentheses were not prominent enough to discuss. However, they did indicate trends that usually became prominent enough to discuss in a subsequent phase.

The students' initially high and gradually declining scores on VII+ Exhibition reflected the gradual waning of their optimism and inconfidence that a satisfying relationship with Mr. D would develop through mutual cooperation. The students were eager to establish public images which could be shared by Mr. D and themselves and they demanded that he let them establish these images. These demands were also a part of the student activity, enthusiasm and assertiveness reflected by their high scores on V+ Challenge. Here, the students angrily encountered Mr. D's demands with their own, focused on how to set up a mutually satisfying relationship and a good work atmosphere. These angry feelings and assertive behaviors, however, soon led the students to feel concerned about the possibility of retaliation by Mr. D. The students' high scores on I- Anxious Dependence indicated the growing fear of and dependence on Mr. D. The students began gearing their behavior toward avoiding his disapproval and gaining his approval. Furthermore, they complained bitterly when he didn't provide the guidance which they expected from him. The students' high scores on II+ Concealment reflected a concern -- which complemented their interpersonal anxieties -- over their ability to control their own feelings and impulses. The uncomfortable feelings, such as anger and helplessness, that had been stirred up in this phase now had to be subdued. The need to deny the uncomfortable events of this phase was manifested in flightly or extremely passive behavior or in silence.

Phase Analysis

Mr. D believed that once he concluded his introductory lectures and took up the course material his initial disappointment with the students would be diminished. In Phase Two, Mr. D's high scores on I+ Reactive reflected his feeling that once he got into course content he would be able to facilitate independent student activity through stimulating interchange of thought and opinion. In fact, Mr. D was quite skilled at sharpening student thought through elaborations and clarifications of their contributions. His optimism, however, was marred by uncertainty over whether his students were really capable of producing for him. In addition, in the back of his mind was the annoying feeling, which probably surfaces to some extent in all new teachers, that he didn't have what it takes to achieve his own standards of effective teaching. The result was that an important component of Mr. D's desire to facilitate student productivity was for the purpose of validating his own teaching effectiveness. Contributing to Mr. D's concern over the attainment of his role expectations and the fortifying of his self-esteem was the distrust of the motives behind student behavior. The task-oriented activity that he wanted to facilitate provided channels for the expression of conflicting student concerns about wanting more freedom from his domination and more gratification of their dependency, among others. Mr. D relished those times when there was a paucity of emotional expression in the classroom because everyone was more "task-oriented" and it was "better for thinking." He was caught in a conflict over whether he really was willing to deal with, or at least face, the expectations, needs and fears stirred up when he fostered student activity. This conflict was reflected by Mr. D's high scores on I+ Reactive in terms of the strikingly contrasting pressures which he put on the students. On the one hand, he called for and promised support for ideas and even independent opinions, challenging the students to prove that they were competent enough to speak up. On the other hand, when the students did speak out he attacked them for being naive and incorrect. Furthermore, when the students reacted to this treatment with silence, Mr. D saw it as a reaction to a course they considered too tough, i.e., whose standards were too high. Examples of the conflicting pressures that Mr. D was putting on the students occurred during a long dialogue between him and a couple of male students. Immediately proceeding this segment Mr. D had chided the students over the lack of critical reactions to their weekly course lectures. Several females had spoken up in criticism of the sexual interpretations in the Cinderella lecture and Mr. D had countered them. Now the males were beginning to speak.

Eugene: But I think when you start taking every detail and giving it some great significance, then I think you're just stretching it a little too far.
Mr. D: Ahum, perhaps.
Floyd: I don't remember anything at all about the father being in Cinderella stories I've ever read or that have been told to me. That seemed quite important to the psycho-sexual emphasis of everything she was doing. At least her conception of mother and father. Of course, I don't know, the fact that he had rejected her in favor of the stepmother. I don't even remember a father at all in these stories. At least a father that rejected her.
Mr. D: Well, it wasn't the father that rejected Cinderella anyway. It was the wicked stepmother.
Floyd: Well, he ah, the lecturer. I think his name is Dr. M --
Mr. D: (with irritation) Dr. M is the lecturer in Psychology 101.

A couple of minutes later Floyd was still pursuing his point:

Floyd: But since her mother left, she would ordinarily be expected to take over her place in her father's life.
Mr. D: Ahum.
Floyd: Well, she didn't -- right?
Mr. D: Well, she didn't take over her father's place, but she found --
Floyd: I mean take over her mother's place inasfar as --
Mr. D: I know what you mean, but she did in a sense by marrying a prince charming. He had all the qualities a father has for a little girl. Powerful...
Floyd: Well, I'm talking particularly in the childhood stage when she was growing up and she lost her

a

mother and the father married the stepmother. At this particular stage she had been rejected and of course she wasn't mature enough to get substitutes and that was supposed to be the whole process of growing up. The sexuality stages, but...

Mr. D: No, remember this is a children's tale told to children and they are...

Floyd: No, what I'm talking about is interpretations of it and this is the meaning he put on it.

Mr. D: (with irritation) What does that, I don't see, I guess I don't see your objection.

Floyd: The objection I was saying...

Mr. D: Are you saying this just isn't a part of childhood...

Floyd: No, I'm not saying anything like that...

Floyd then went into a long tirade on this "sex opus." A little later Mr. D summed up his impressions of the thoughts contributed about the Cinderella lecture:

"Well, one of the things that I always notice when this story is told, and I have to admit to be a little irritated by this, is the amount of kind of giggly hee hee kind of phenomena which goes on in the audience. I suppose I should get over any irritation because it's a perfectly natural reaction..." He went on to enjoin the students to look into themselves for the source of their resistance to these ideas and pointed out their feelings as persons and as students for not being more receptive even to some uncomfortable ideas.

Confronted with his own conflicting attitudes and feelings and the interpersonal strains with which he felt burdened, Mr. D's wariness of the class increased. His high scores on V+ Apprehension reflected his attempts to escape from the tangle of forces that were obstructing his goals. Many statements that Mr. D made during this period, particularly in our interviews with him, suggested that he was trying to emotionally disengage himself from uncomfortable involvements with the students. He particularly disliked being a target for their complaints over not receiving enough guidance and support. Mr. D wanted to tone down the expressions of both his and the students' hopes and fears. He did so by channeling them into task activities, consequently encumbering these activities with a confluence of interpersonal conflicts. One of the major interpersonal and very personal strains that Mr. D attempted to control with task activity was the reality of his increasing dominance over the students. On the one level it thwarted his educational goals of a dialogue (e.g., independent and critical thought), or another level it stirred up in him feelings and images of potentially aggressive manipulations of the students. Mr. D's attempts both to combat student dependency pleas and his own tendency toward reacting to these pleas with increasing control often resulted in his presenting the student with contradictory and confusing options for behavior. For example, there was his attempt to provide the students with autonomy by giving them choices of action that really weren't choices. Mr. D provided the students with three alternative methods of doing the term paper: all working individually; all working in small groups; or each student himself choosing to work individually or in a small group. While Mr. D wanted them to work in groups he gave them a choice but he also added some qualifications: "What I meant by having all the papers graded on the same scale is that I will not take into consideration that a paper was written by one person or that it was written by three people. I'll expect the same amount of work from a one-person paper as from a three-person paper. That's the difference. It's to encourage people to work in groups but not to force them to." It is questionable, however, whether the students felt this was much of a choice, since they already felt that Mr. D was going to be a tough grader as it was.

There was also an unrealistic flavor to what Mr. D expected the student reactions to be. He was waiting for signs of gratitude and independence in response to his apparent liberality but he was confronted with even more student demands and complaints. These signs of student disaffection only pushed him further into withdrawal from emotional involvement with the students, and into a greater reliance on authoritative impersonality in order to counter the uncomfortable feeling that he was becoming too authoritarian. Mr. D was not only engaged in a strategic withdrawal in order to realign his own forces; he was also backing off from some students who, at this time, were attempting to capture his attention and involvement in the hope of realizing deeply personal wishes and needs. These students characterized in an extreme way the hope of each student, at this point, to forge a personal relationship with Mr. D. However, he was extremely anxious over having to contend with these pressures and attempted to turn all of their appeals to him back onto the task level. An example of this occurred in a discussion of "imprinting" where the students were asked to give an example of it in humans. Robert, who as we shall see later, spoke quite freely of his family problems and at the beginning of the course had attempted to establish a close relationship with Mr. D and use the latter as a sounding board for his problems. However, Mr. D had ignored his overtures. Robert was *not* contributing an example of imprinting which blatantly symbolized some of his concerns, and Mr. D was again avoiding them:

Robert: Maybe this wouldn't apply but I was thinking with a mother and child, it wouldn't be imprinting on the child as much as the mother. Like when the child runs out into the street she gets hysterical or screams...
Mr. D: Let's not extend what imprinting means...
Robert: No, I...
Mr. D: Imprinting means...
Robert: No, I thought that's what it implied (laugh).
Mr. D: The mother...
Robert: The more the kid runs out into the street the more she's going to scream.
Group: (Laugh).
Mr. D: That has no relation whatsoever to imprinting.
Robert: Not at all?
Mr. D: Not at all.
Robert: It's kind of interesting.

The fluctuation of the student factor scores within this phase reflected, in part, the students' varying reactions to Mr. D's continuous attempts to carve out a set of effective role behaviors and a comfortable interpersonal style. It also reflected the varying moods which can sweep over the students because of some common internal impetus. Although the atmosphere in the early sessions of Phase Two was generally tense and hostile the students scored high on VII+ Exhibition during those times when Mr. D was relatively friendly and accepting. During these periods which occurred more frequently in the beginning of the phase the students' latent optimism and confidence came to the surface. They felt that there were opportunities for them to cooperate and develop a harmonious and satisfying interpersonal relationship with Mr. D. "Although things may be difficult, now they will get better as soon as teacher and students become more familiar with each other and begin appreciating what each can offer the other." The students were new members of a prestigious university and their expressions of self-confidence reflected their pride in this achievement. Furthermore, they were eager to become active participants in the academic community and wished to move closer to those whom they saw as established members of this community.

The students had various conceptions of what it meant to participate in a university community. For some it was a place of comradeship and apprenticeship under respected professors, somewhere to actualize latent talents and learn new skills. For others it was a place to learn a trade in a prestigious setting. A common element in the conceptions of their positions in the academic community was they they had proven themselves worthy of some respect and responsibility by the fact that they had gained admittance into the community. The students expected Mr. D to take their past achievements and potential abilities into account when dealing with them. During a discussion of reinforcement theory this expectation was manifested in response to Mr. D's symbolic appeal for students to engage in the sorts of behavior that would gain his approval. He asked for examples of what students could do to help "the teacher" learn their names.

Mr. D: Well, are there any other kinds of reward that you can think of?

Robert: Well, I don't think it would be a reward, but it's similar to what somebody said before about, ah, about knowing, about seeing somebody's looks. If you happen to know somebody in previous experiences with the same name, say you had a close friend whose name was Robert, you might learn my name first or something like that. Or if he was an enemy, I'd be in bad shape.

Mr. D: What other things could reward the teacher for learning the names properly?

Eugene: Perhaps when you want to bring out a particular point or a particular answer, a correct answer, there are certain people you call on from past experience?

Mr. D: Yeah, and so if they give you the right answer you expect...

Eugene: If they don't, well (laugh).

The guarded references to potential rebuke that both of the above students tacked on to the ends of their ideas indicated the persistent awareness of the tension and hostility that surrounded all of the students. The students' high scores on V+ Challenge reflected those times when that awareness blossomed into active criticisms and complaints at what the students saw as excessive and unjust pressures being put on them by Mr. D. They were then in no mood to be respectful and obedient students; instead, they wanted to let him know that they hadn't worked for many years and accomplished what they had just to be told that they were weak and incompetent. Furthermore, they reproached him for failing to live up to what the students saw as appropriate behavior for a member of the academic community. They were ready to go about the work of learning but the students expected their enthusiasm and friendliness to be reciprocated to some degree. Unlike the behavior reflected by II- Contention the students were too angry to completely bind their feelings to task activities. While they didn't feel strong enough to rebel against Mr. D with a full scale strike, V+ Challenge reflected the students' attempts to sabotage his efforts to maintain a cut and dry task orientation. The students were ready to go through the motions of work but a good deal of their energy was being channeled into turning aside Mr. D's demands on them and into expressing their own complaints. Consequently, during these periods there was a good deal of what ostensibly looked like energetic task activity, but much of their behavior was actually angry bickering and complaining which was irrelevant to the task. An example of the obstructions to task engagement produced by unresolved emotional issues occurred during a discussion of various learning theories when the students were asked to comment on Skinner's methodology.

Mr. D: What are some of the characteristics of this theory?

Gus: It seems like when he goes about to prove something he more or less seems to be a skeptic. When he begins he tends to well not exactly assume, but you might say he assumes it's false rather than assumes it's true, and he makes it as tough as he can for the subjects to verify what he's trying to find out. Like with those chimpanzees...

Mr. D: I don't think you know really that the Anglo-American tradition has any corner on skepticisms.

Gus's idea, while perhaps not particularly relevant to the task discussion, seemed very relevant to his perception of Mr. D's attitudes toward the students' contributions.

The students were not able to maintain the sorts of behavior reflected by V+ Challenge for any length of time. On the one hand, they were subject to the ultimate authority vested in Mr. D by the system; on the other hand, each student needed to establish some sort of accomodating relationship with Mr. D which would free the student from the fearful threat of the latter's hostility. A combination of externally perceived threats and the feeling that they were no longer able to control their own frustrated needs and growing fears gradually dampened the students' confidence and assertiveness. The result was the emergence of high scores on I- Anxious Dependence, which indicated the students' increasing effort to gain Mr. D's approval and support so that he would provide protection from the dangers that they saw all about them. They felt Mr. D withdrawing from any close relationships with them and ignoring their pleas, demands and complaints. Furthermore, the students saw him wielding increasing power and they were reacting to this by sinking into a position of dependently trying to placate him. Mr. D, however, was still vascillating between threatening and supporting. The students wanted to stop this vascillation on the side of support but were reluctant to make the attempt for fear of stopping it on the other side. An example of the sorts of situations they were fearful of occurred during a discussion of Tolman's learning theory. Mr. D was posing questions for the students and they were not answering to his satisfactions. Consequently, he was admonishing them.

Mr. D: And if you couldn't have gotten it from reading the text, you should have guessed that the first one was the law of effect and the second was the alternative description, of course. Excuse me, the first was about the law of contiguity and the second was naturally about the law of effect. Now what paradigm is the law of effect most closely associated with?
Students: (Silence)
Mr. D: (Mockingly) Insightful learning?
Esther: (In almost a whisper) I think so, because...
Mr. D: (With irritation) No!
Steven: (Timidly) Operant Conditioning?
Mr. D: What's he doing at the beginning of this article? How many people have read this article?

The students' anxiety and passivity also originated in each person's fear of becoming the victim of Mr. D's displeasure, as were Esther and Steven's unfortunate fates for a moment. This created a vicious circle of student passivity in reaction to the threat posed by Mr. D who, in turn, reacted with increased hostility which drove the students further into passivity. Interpersonal anxieties that stimulated passive student behavior also combined with this behavior to re-evoke the sort of dependent and compliant orientation toward authority figures which was more appropriate for and prevalent in the students' childhoods. Under this sort of regressive influence the cognitive and the emotional needs of the students tended to become more circumscribed, which resulted in a stultification of the learning process. In addition, this dependent and compliant orientation stirred up feelings, impulses and fantasies more appropriate for an earlier period of development. The content of these urges and images focused around fears of harm to each other that could be uncontrollably perpetuated by students and teacher and the need for a strong and benevolent authority in order to control all potentially injurious urges. The students' interpersonal distress was exacerbated by the leakage into their role behaviors and ego coping mechanisms of such intrapsychic fantasies. While, in fact, the students were older, stronger and generally better equipped to handle distressing intrapsychic events, the emergence of high scores in III+ Concealment reflected their concern over being able to handle such events. The expressions and denials of anxiety characterized by III+ Concealment indicated the students' dismay over being able to cope with inner turmoil, which in childhood had been a legitimate concern but which now generally reflected an unrealistic underestimation of their ego strengths.

In thinking about the sorts of interpersonal interactions reflected by high scores on III+ Concealment -- as well as other factors -- we can picture a covert dialogue which parallels and interacts with the conscious overt dialogue. The fantasies of aggressive manipulation, for example, contributing to Mr. D's high scores on V+ Apprehension are echoed here in student anxieties over harming each other and Mr. D with their hostility or being harmed by retributions from the latter. This covert dialogue is fostered by material from the overt task dialogue. For example, student concerns over being harmed by more powerful beings than themselves (e.g., the teacher) were supported by overt examples of the power of coercive authorities in the discussions of "utopias." On the other hand, the overt teacher-student interchanges are influenced by the covert dialogue. For example, the students' strident opposition to certain ideas reflected their inability to clearly enunciate all that bothered them. Their resistance to things that they found too vague to get hold of and too ominously pervasive to leave alone indicated the fears active in their covert dialogue. During a discussion of the sexual interpretations of the Cinderella lecture, Gloria attacked these interpretations and Lisa closely followed with an expression of helplessness over not being able to handle these ideas.

Gloria: Don't you think he was driving a little hard when he talked about her losing her shoe, losing her virginity? I mean, that was kind of digging out of the barrel, wasn't it?
Mr. D: Well...
Robert: Cinderella got the shoe back yet?
Students: (Laugh)
Mr. D: I don't what I think about that. I think it probably follows the rest of the interpretation.
Lisa: I don't know. I think you can find anything, you can read anything psychological into anything you want. And while I think partially you could relate a little of it, I think it was a little too much to the extreme. Anything you could say or do or read!

A little later, Lisa was still pursuing her point:

"But still they write just so much into it!"

While the students attempted to conceal their fears and to keep the lid on the impulses and fantasies that stimulated these fears, they also attempted to withdraw from student-teacher interchanges that fueled the interplay between overt and covert dialogues. Sometimes this entailed a strategy characterized by flippant complaining and sniping, like Robert's remark in the previous segment. At other times, the students seemed to be talking past the teacher. For example, during a discussion of the dangers in utopian societies, Mr. D voiced a theme running through most of the students' ideas.

Mr. D:	I think there is an implicit assumption going on in a lot of this conversation that the control is going to be coercive control. This is the way it is in a dictatorship.

He went on in a sarcastic tone: "...probably with police running around beating people into line, deadening their sensitivities, crushing their individuality. Well is this the only way of doing it?"

Joe:	Well I was going to say the place where it seems that the Marxian or socialism or some form or another comes closest to working is in a beehive or a log full of termites or something. And these little beasties can't think.
Students:	(Strained laughter)

VII+ Low Warmth was a teacher factor that Mr. D scored high on early in the phase but which reflected a background mood of his throughout the phase. This mood consisted of Mr. D's feelings of frustration and failure over the state of the teaching-learning interaction and the interpersonal relationships of which it was composed. He was disappointed and angry at the students for what he saw as their failings and their recalcitrance in the face of all of his attempts to get them working. Furthermore, he felt helpless to do anything about it. He was aware that he might be demanding too much of the students and he wanted to replace the hostility and tension with comradeship and friendliness. However, Mr. D didn't realize the tension being caused as a result of his ambivalent attacks on the students when they failed to contribute and the subsequent attacks on almost anything that they did say. Furthermore, Mr. D's comfort in a teaching style that relied heavily on his role as an expert cowed the students under the weight of his knowledge and authority. Like the strong man who can't understand why people won't shake hands with him, this very intelligent teacher couldn't understand why the students were fleeing from his teaching methods and goals. In introducing a discussion on teaching methods, particularly the pros and cons of teaching machines, Mr. D made a strong plea for student suggestions for effective teaching methods. In response to some comments that a good teacher would promote "interest," "attention" and "appreciation of the science" Mr. D said in a plaintive voice:

"These are all points of interest. Would you like them (students) to learn anything in the course, or would you just like them to like the science?" Again, after some more general comments from the students, he said: "Well, I'm interested in, I'm posing a realistic problem. You have got the course to teach. What do you want to accomplish?"

Study of Individual Students

Before completing our discussion of this phase we will again examine the student factors from another angle. Instead of sweeping over the class as a whole we will look at individual students in order to discover intrapsychic antecedents to class behavior. Gloria scored high on both VII+ Exhibition and I- Anxious Dependence. This dual characterization captured her unique position among the females strong enough to display feelings of self-esteem in relation to and affection for Mr. D. Gloria was attracted to Mr. D and engaged in a good deal of aggressive sparring in the hope of getting a favorable response from him. For instance, while giving a hypothetical example of sexual imprinting in humans she symbolically challenged Mr. D to prove his masculinity by letting her chase him. However, underneath this sort of behavior Gloria had a terrible fear of being thought stupid and unattractive by Mr. D and desired to be dependently cared for by him. Her early confident behavior coincided with a preoccupation with Mr. D as a person. She always noticed his dress and general manner and apologized for noting that: "He doesn't know what to do with his feet." Gloria thought Mr. D was awfully nervous but was enthralled with the image of him as "the scholar." Her ideal relationship with Mr. D would find him personable, friendly and chatty; and she frequently criticized him for being too far above the students and mocking them for their weaknesses. Her mixed feelings toward him, however, always resulted in her apologizing for these criticisms. Gloria felt hurt and rebuffed when Mr. D seemed to ignore her. She said: "All of us had a crush on him at the beginning but we resolved it." Yet she felt "frustrated" and "afraid of being cut down." Gloria's anxieties and frustrated needs for support left her extremely wary of Mr. D and increasingly silent in class: "At times I'm on the defensive."

As with the two female students discussed above Gloria's high scores on VII+ Exhibition and I- Anxious Dependence had uniquely feminine characteristics. However, males and females characterized by the same factor behavior reflected similar aims. The specific content varies with sex as with individuals but the general typologies of needs, fears and strategies are similar. These typologies -- really sections out of an interwoven net of intrapsychic and interpersonal forces -- are fairly well isolated and represented in the factor behaviors.

It seems time to introduce a male student. V+ Challenge -- the factor reflecting the most aggressive student behavior -- seems an appropriate place to do so. Floyd was the only Negro in the class. Although many of his concerns in the class undoubtedly were influenced by the particular problems of his race, these couldn't be taken directly into account in this study. Floyd, of all the students, in many ways seemed most similar to Mr. D. He maintained a cool dispassionate front and even when displaying strong feelings bound them in a highly intellectualized delivery. Floyd's feelings were generally angry. He intensely disliked both Mr. D's relationship to the class and the students' inability to cope with their teacher. He felt that the students weren't competent enough to engage in any type of task other than the rote learning of facts. Yet, much of his anger originated in his own conflictual position. He felt an affinity between Mr. D and himself and desired to actualize it in task productive interaction, which could lead to Mr. D's recognition of him as an unusually competent student. However, these hopes were frustrated and his anger and frustration pointed both to Mr. D and himself. Floyd tried to mask his concerns about Mr. D behind a preoccupation with the course material and from this orientation he saw the latter as a competent teacher. However, even from this position Floyd felt a tremendous tension between student and teacher aims. He saw Mr. D as "in" and the students as "out" and wanting in on what Mr. D had: "Maybe knowledge." Floyd very much resented this perceived gap between teacher and students and displayed contempt for those male students who he felt tried to ingratiate themselves with Mr. D in order to get closer to him. He never allowed himself to show signs of needing Mr. D's favors; instead, he often criticized the latter either for poorly representing the field or for representing a poor field.

The last student factor to be examined in this phase is III+ Concealment. Robert, who scored high on this factor, provided good examples of the behavior and some of the important issues (although it must be emphasized the content of each students' concerns is, of course, particular to that student) characterized by III+ Concealment. On the one hand, his flippant joking manner cloaked the intensity of the needs and fears he was describing. His personal slogan was "it doesn't bother me." On the other hand, his openness to others about himself revealed many of the concerns that lay behind his high scores on Concealment. Robert tended to be more open than the other students about talking about his past life and family relationships. He also was much quicker in relating those relationships to his present feelings about the classroom. He saw Mr. D as similar to his father in that both were "rational," "dominant" and gave responsibility; however, he saw his father as more understanding. Robert's feelings about his mother were very intense for he described her as extremely hard to live with and as not providing very satisfactory mothering. He evidently had conflicting feelings about her, expressing a great deal of anger and then apologizing for it. While family patterns and interrelationships are usually a crucial source of student attitudes toward a particular teaching-learning interaction, they're not usually as directly related to these attitudes as was the case with Robert. For him the intense need to find in persons in authority the nuturant care and understanding that were absent in his family relationships overshadowed all other issues. Robert was not as overtly concerned as many of the other students with the threat from Mr. D's masculine power: "He is brilliant but no superman..." "I have no impressions of him as a father or tyrant." While Robert may have been denying his fears of Mr. D, he genuinely seemed more interested in the feminine mothering qualities of empathy and compassion from his teacher.

In this class Robert was frustrated in his initial attempts to set up a trusting and dependent relationship with Mr. D, due either to the latter's unawareness of what Robert was trying to do or to Mr. D's wish not to get involved in dealing with such overtures. The nature of Robert's needs and impulses and his anxious attempts to deny their intensity were illustrated in the joking manner of his self-description: "I have all the symptoms of an oral fixation...but I try to avoid being dependent. I know that I am too dependent, but it doesn't bother me." Robert had strong needs to be supported and enriched emotionally and intellectually.

These needs stirred up feelings of being empty and of needing to be filled up whether with food, love or knowledge. He saw the students as a "receptical" because all of their heads were being "filled up with knowledge." One of his great fears was being deprived of support from others (e.g., teacher) which, in fantasy, would lead to his growing weak or withering away. Another of his fears was of being provided with criticisms and hostilities by those whom he expected to provide support and care. Consequently, he would be filled up with harmful supplies, that is, without his own reservoir of confidence, he feared having his self-esteem lowered by criticisms, threats and rebukes from those he depended upon for support, like his teachers. Threats imminent in a class situation colored by these feelings were reflected in Robert's complaint that he had to work hard to "survive" in this course. Another fear that Robert had was the possibility that he might harm others who he felt must de dependent upon him for care. These others probably included just about everyone else, since Robert, like most people, used his own experience to formulate a conception of the needs and fears of others. As was previously mentioned, Robert felt rebuffed by Mr. D and felt that he would learn much better if the teacher were friendlier with him. Robert said that Mr. D was "too standoffish..." "he doesn't allow the students to know him." However, his frustrations, fears and resentments were covered by a jovial demeanor. Still, Mr. D was made increasingly uncomfortable by Robert's frequent titillation of the class with jokes and sarcastic comments in whispers loud enough to be heard by everyone in the room. In this way, Robert concealed those things that bothered him while letting Mr. D know that everything was not as harmonious as it could be.

Summary

At the beginning of Phase Two both students and teachers were still jockeying to establish mutually satisfying roles and interpersonal relationships. Mr. D attempted to reconcile the discrepancy between his expectations for the students with what he felt they were offering, and in the process put them in the position of being criticized for not contributing and being criticized for what they did contribute. Furthermore, in reaction to the involved and antagonistic relationships being developed between him and the students as a result of the students' demands for less domination and more understanding by him, Mr. D began withdrawing to a position of interpersonal authoritativeness. This withdrawal was also in reaction to his uneasiness over the increasing authoritarian control he felt himself wielding. The students, for their part, after a period of confident assertiveness, became anxious over the threats they saw in Mr. D's increasing power and their own increasingly uncomfortable feelings and impulses. They reacted with feelings of distress, dependent pleas for support and with a growing reluctance to engage in any open exchange of ideas and opinions. Mr. D sensed the students' lack of spontaneity and their inability to move freely among the information and concepts with which he wanted them to deal. But he didn't appreciate the extent to which the interpersonal tensions in the classroom could lead the students off onto paths quite divergent from the teacher's goals. To some extent Mr. D blamed himself for not living up to the standards for a competent teacher which he set for himself. However, his discontent was initially directed at the teaching culture in which he found himself, because he felt that the divergent teaching philosophies expounded in this culture weakened each individual teacher's position. Mr. D felt under pressure to validate his own educational philosophy and the brunt of his dissatisfaction ultimately landed on his students, who were the ones failing to take advantage of what Mr. D believed to be fundamentally sound educational methods and goals. However, he knew merely feeling disaffected would not remedy any problems. In the next phase Mr. D struggled with these problems in an effort to carve out new paths that were more amenable to him and to the students, and that were closer to his aims.

PHASE THREE

Phase Overview

Phase Three included sessions 13-18. The tone of this phase was set by Mr. D's partially successful attempts to stimulate the students into involved task activity by providing a more supportive and friendly atmosphere. He was still critical of his students' handling of the material on perceptual theories which they had been discussing, but he began making more of an effort to empathise with their difficulties in handling the material and to become friendlier with the students through mutual participation in various illustrative experiments (e.g., perceptual illusion devices). Mr. D, however, still felt that these "games" produced only an artificial dialogue. Periods of activity, friendliness and support still alternated with periods of threats and accusations in response to student passivity. Consequently, in Session 15 Mr. D used his discussion of Gestalt theories of perception to present himself as an understanding facilitator of student spontaneity and independence. He did this with the hope of radically changing the direction of the teaching-learning interaction in order to alleviate the hostility that had plagued the class, to decrease the interpersonal distance between himself and the students and to promote more student initiative. Mr. D's discomfort with these attempts was reflected in the way he went about attempting to achieve these goals, which was to jokingly disparage the theorists and theories being studied and to offer the students the chance to join him in this. The students, however, did not respond as enthusiastically as Mr. D had hoped. In what may have been, in part, a reaction to this Mr. D began sarcastically deprecating his own efforts to deal with the material and opening the door for the students to join him both in criticizing himself and in dealing with the material. The surprising result was that he and the students began actively and enthusiastically dealing with the material in an egalitarian manner; yet, it was characterized by a great deal of mocking disparagement of the course material and of self deprecations by Mr. D. Along with the relatively high level of student autonomy, however, this nurturant atmosphere stimulated the blossoming of dormant student expectations and needs. There were pleas directed at Mr. D for more and less dominance, for more and less intimacy, and for numerous other qualities and intensities of relationships.

Mr. D soon felt "exhausted" by this re-emergence of student demands. Although still very friendly and permissive he began reinstating the interpersonal distance between the students and himself. In the later sessions of this phase, Mr. D's re-emerging dominance and the resultant feelings of helplessness on the part of both him and the students to do anything about it were accentuated by his announcements of the coming mid-term examination and a homework assignment in preparation for it. Mr. D's renewed concern over his increasing dominance was also manifested during the discussion of motivation concepts, in which he gave examples of motivational factors behind feelings about grades, class pressures and teacher-student relations. In addition, the need to justify his growing control was manifested even when the students were relatively enthusiastic and active. He frequently coaxed and prodded them for even more activity because he felt they weren't producing enough. The end of this phase saw the full re-emergence of teacher frustration and criticalness and student passivity and distress. The involvement in controversial material, including discussions of prejudice and authoritarianism and the introduction of Freudian personality concepts, only fueled the flames of discontent. Mr. D was again involved in negatively evaluating student contributions while simultaneously reacting to the consequent student passivity with accusations of irresponsibility in the face of "serious social problems." Student arguments, complaints and expressions of distress increased in reaction to the combination of Mr. D's renewed hostility and dominance and the new discussions about such potentially discomforting subjects as Freudian dream interpretation and the nature of the Oedipus complex.

Factor Summary

Table 3

Teacher	Students
I	- Enactment - hi
II	+ Consent - hi
III+ Colleague - hi	
IV+ (Punitive - rising)	+ (Discouragement - late spurt)
V	
VI+ (Display - early spurt)	
VII+ Warmth - hi	- (Unresponsive - late spurt)

The teacher factors in this phase characterized the thoughts, feelings and behaviors involved in Mr. D's energetic attempts to modify the teaching-learning interaction in the direction of his goals for the class. He was disenchanted by the tension and hostility in the class and searched for more satisfying, harmonious and productive relationships. Mr. D's high scores on III+ Colleague reflected his attempts to manipulate the task activities and formal structure of the class, in an effort to establish the sort of close and friendly relationships with the students with which he was normally uncomfortable. His temporary success in this effort gave him a feeling of independence from interpersonal concerns, and allowed him to gain a closer understanding of the needs and problems with which the students were struggling. Mr. D's enjoyment of a greater empathy with the students motivated him to get into even closer and more personal contact with them than was possible through channels of straightforward task activity. His high scores on VII+ Warmth reflected his desire for closer relationships with the students and the resultant egalitarian spirit which prevailed. Yet, this factor also reflected his growing discomfort with this intimacy. Mr. D tended to manifest his own feelings of tension in close colleagual interaction with his students when he facilitated these relationships through humorous but abusive disparagements of his own authority and knowledge. Throughout the term Mr. D had brief spurts of high scores on VI+ Display which in different phases reflected different issues. His high scores on this factor early in the phase reflected mixed feelings behind his efforts to relinquish authority; feelings which provided a background tone for the entire phase. On the one hand, he felt confident that his mode of teaching had begun providing the students with the skills necessary to take some responsibility for independent action in the teaching-learning interaction. On the other hand, Mr. D wished to escape the student pleas and demands stirred up by the egalitarian atmosphere that he was fostering and playing down his hold on control and responsibility was one way to do this.

The student factors high in this phase reflected the students' enthusiastic reactions to Mr. D's behavior and the fate of those reactions. Mr. D's growing support and understanding had the effect of promoting the students' feeling that they were free to express themselves without fear of ridicule or rejection. Their high scores on I+ Enactment reflected the utilization of their motivation and skills, which students usually bring to a classroom but which just as usually must be facilitated by the teacher. The students' new comfort with Mr. D and new appreciation of what incentives and skills he could offer them led to a new appreciation of their own skills. This appreciation was manifested in terms of integrating his modes of and standards for learning into their own, when the student saw compatibilities between their styles and Mr. D's style. From the students' view, however, Mr. D presented an awesome display of knowledge and skills. In addition, his discomfort with them and uncertainty over the prevailing egalitarian spirit and interpersonal closeness was echoed by the students in their re-emerging reliance on Mr. D to lead them. This renewed dependency was also reinforced by Mr. D's renewed dominance. The students' high scores on II+ Consent, however, reflected their new perception of Mr. D as authoritative yet benevolent; someone to please and to emulate in order to receive justified and expected rewards. Although tension and distress were being felt anew from a combination of new interpersonal difficulties and discomforting course material, a good deal of student passivity was due to their engrossment in watching Mr. D perform.

Analysis of Phase Three

Phase Three began approximately one third of the way through the term, but Mr. D felt farther than ever from his goal of being able to carry on an interesting and enthusiastic "dialogue" with his students. In addition, he felt that more and more of his and the students' time and energy were being spent in pointless bickering. He said he felt very uncomfortable with the class. Mr. D didn't like thinking about or coming to it and he usually found some reason for being critical of it. His educational orientation was relatively tough-minded and task oriented, and he didn't believe that discussions of the students' interpersonal concerns in this class were an important part of their educational aims. However, perhaps unwittingly at first, Mr. D began to respond as if the students' feelings about himself and the course as a whole did influence their involvement in the course material and as if the amounts of energy that they allocated to task activities and interpersonal concerns continuously varied as a function of those feelings. In other words, he seemed to be reacting with more tolerance to the fact that students don't just directly assimilate course content, but rather, approach the content cautiously in order to determine its value to them and to determine the most efficacious ways they can deal with it. Mr. D's high scores on III+ Colleague reflected the growing realization that he couldn't polarize students into those who he could fashion in his own image and those who were hopelessly inadequate to be so fashioned. In his search for more productive and harmonious relations with the students Mr. D attempted to empathize with their interests and difficulties in order to encourage them to transform their interests into productivity and to guide them through problematic areas. Furthermore, Mr. D attempted to regulate his own reactions to the pressures that he felt from the students. This did not entail a withdrawal from involvement with them; rather, he tried to maintain an equilibrium between the confluence of forces that drove him toward and away from his students. In other words, he sought to carve out an involved but independent position vis a vis the students.

Mr. D's high scores on III+ Colleague reflected a new orientation toward the students but it also reflected his reaction to a new dilemna. Although Mr. D acknowledged the reciprocal effect of his attitudes toward the students and their reactions to him, he didn't believe that he had the background or the energy to lead the class in an analysis of their interpersonal problems. Consequently, Mr. D chose to handle those problems by making his behavior a model for the friendlier and more reciprocally supportive sorts of relationships that he wanted to establish. However, Mr. D was not really comfortable in personal interactions with students and the strains involved in his efforts to move in that direction gave a staged quality to the behavior characterized by III+ Colleague. What, in fact, developed was a pseudo-intimacy between students and teacher based on Mr. D's manipulation of the course's formal structure and task activity. For instance, he began using more class activities--such as perceptual illusion devices to illustrate perception concepts and experiments and exercises to illustrate motivation concepts--in order to facilitate more active involvement by the students. But his control of the activity always posed demarcations on interpersonal closeness.

The situation was similar to an office or assembly line where the supervisor is able to mingle comfortably with the staff or linemen because the explicit status boundaries provide insulation from potential interpersonal intimacy.

It appeared that the only way Mr. D could feel comfortable on stage and yet so close to his student audience was to direct all that occurred. This control was facilitated by Mr. D's own impressive knowledge and teaching skills, because in trying to work alongside the students he frequently overshadowed them. The problems Mr. D was having in reconciling his own mixed feelings about the sort of educational experience that he wanted his students to have and the interpersonal problems being fed by those feelings combined to give Mr. D a growing sense of never devoting enough time to seeking the establishment of a genuine beneficial dialogue between himself and the students. However, Mr. D's desire for this type of relationship was indicated by his enjoyment when occasionally he did become immersed in student activity. For example, during a discussion of motivation theories, Mr. D asked for test words for a free association experiment, an experiment which the class was going to conduct.

Mr. D: Now, what words do you think we should have for this test?
Joe: Chase, perhaps?
Mr. D: OK, any others? Short words.
Morton: Purse.
Floyd: What about elevator (an important part of the experiment had to do with the building containing an elevator)
Mr. D: (In a tone of voice that expressed his sharing of Floyd's reason for choosing this word) Yeahhh.
Students: (laughter)
Mr. D: (enthusiastically) Come on, somebody else. We've got to get twenty.
Joe: Office?
Mr. D: Office, okay. I don't know, do you think it would be a good idea to put some neutral words on the list?
Students: Yeah.
Mr. D: Do you just want to put some neutral words on the list?
Students: Sure.

Mr. D's attempts to establish more harmonious and productive role relationships with his students, while not as successful as he would have liked, gave him a better understanding and appreciation of the students. His high scores on VII+ Warmth reflected a feeling of positive attraction toward the students that resulted from his foray into their world. VII+ Warmth reflected Mr. D's efforts, motivated in great part by his newly discovered good feelings for them, to move as close as he could to the students in order to make his hoped-for dialogue an intimate and enthusiastic interchange between real persons who were interested in each others' feelings and, perhaps, who cared for each other. In addition, Mr. D wanted to relinquish as much of the reins of authority as he could tolerate in order to promote as much student spontaneity as he could. He now felt that role relations characterized by a dialogue only could work smoothly if accompanied by warm interpersonal relations. His immediate response to moving toward this type of relationship was a more positive evaluation of the students. He also felt closer to them; he said he now knew all their names.

Mr. D, however, was even more uncomfortable in personal interactions with the students than colleagual role relationships. His image of himself as a teacher, his feelings about interpersonal closeness and his style of relating to students just weren't compatible with a comradeship. Consequently, periods of behavior characterized by VII+ Warmth were neither as frequent nor as enduring as the behavior characterized by III+ Colleague. Furthermore, Mr. D's discomfort was manifested by signs of tension and hostility which gave a strained tone to the periods of comradeship. He tended to channel his feelings of discomfort into mocking attacks on the course material and the theorists represented in it. This, in a sense, provided Mr. D with legitimate targets for his anger. This material represented all the pressures of the system (i.e., the field, other teaching fellows, teachers who would evaluate him) that he felt had forced him into a situation of authority which appeared unworkable. Mr. D offered the students the chance to join him in his attacks, which in great part served to free Mr. D from his lonely position of authority. This offer and the students' acceptance of it provided the illusion of student-teacher cohesion, like the brittle cohesiveness of an in-group held together by attacks on some unfortunate outsiders. An example of this illusory cohesiveness occured during an introductory discussion of Gestalt perceptual principles.

Mr. D:	A couple of other principles we might profitably discuss together are proximity and similarity. Now let's see. Proximity (clearing his throat and writing on the board). I hope all of you will see that in -- wait, I'll cross that -- does anybody see that in two groups of three?
Students:	(talking)

Mr. D discussed proximity and went on to the principle of similarity: "And you can just see Wertheimer sitting down writing these things on a piece of paper and saying: 'Aha! I've discovered a new perceptual principle. Let's name it. What will we call it? Similarity, that sounds good!' So they discovered another one."

Mr. D was quite aware of his continued failure to establish the teaching-learning interaction that he desired. In his resultant frustration he turned a good deal of anger on himself in the form of mocking self-deprecation and self-inflicted sabotage of his own task-oriented teaching style. For instance, during a discussion of the Gestalt principle of good figural form he put an example figure on the blackboard for the students to comment on.

Eugene:	What do you mean by good figure?
Mr. D:	I'm not. I don't know what I mean. I'm just asking.
Students:	(Laugh)

Mr. D: Let's get a definite (drawing on the board). You all have an intuitive idea of what a good figure looks like.
Students: (Chuckling, talking).
Mr. D: I mean you know. Maybe that's not (figure on the board), it's kind of messy.
Students: (Laughing, talking).
Shirley: (In a pleading voice) Well, do you mean if that was supposed to be a square that it wasn't a good figure? Or, I mean because that might be...
Mr. D: I just don't think it's such a good figure.
Shirley: I think it's fine.

The students reacted with unexpected enthusiasm to Mr. D's self deprecations and flight from his image of authority and competence. On the one hand, he eagerly responded to their enthusiasm with more of the same. On the other hand, he must have deeply resented the students' apparent pleasure in the self inflicted bludgeoning of his self-image. However, this resentment lay hidden. At this time, while some students were distressed over Mr. D's flight from authority, the majority of them were delighted to be free of the threat of his competence and power. However, the sort of student-teacher interactions they were engaged in only could be short-lived. It was impossible for Mr. D to move toward his course goals if he joined with the students in abusive mocking of the means for attaining these goals. Furthermore, the brittleness of the interpersonal cohesion that was being maintained necessitated its relatively quick dissolution.

Mr. D felt a certain, if evanescent, pride in the spurt of genuine colleagueship and comradeship that managed to emerge through the class' interpersonal difficulties. In this phase, as we shall see, the students participated in the teaching-learning interaction more independently and energetically than at any other time during the course. Complementary to their activity was Mr. D's democratic mood. His high scores on VI+ Display, however, reflected his mixed reactions to the new democratic atmosphere. On the one hand, Mr. D felt that he knew the students better and was confident of their ability, along with the skills he had taught them, to have a larger share in running the class. On the other hand, his confidence in the students was gradually eroded by the strains involved in a democratic teaching-learning interaction. Mr. D became exhausted by his own difficulties in dealing with egalitarian and personal interactions. He also tired of the renewed student pressures on him -- in the form of complaints, pleas, demands and expressions of negative and positive feelings -- resulting from the freedom of expression that he had offered them. The relaxation of authority soon came to mean a desire to excape from student pressures on him and the relinquishing of responsibility for the fate of the course. An example of Mr. D's rejection even of task-oriented student demands occurred while the students were asking Mr. D questions concerning a movie which they had seen about racial prejudice in a surburban community:

Joe: Well, is the Myers family still living in Levitown?
Mr. D: Well, I don't know anything about them.
Joe: Well, how long did the riots and so on, whatever it

was, last after the...

Mr. D: You know as much about it as I do. All I know is I saw the movie.

Mr. D's experiences with comradeship proved to him that this kind of student-teacher relationship posed as many problems as one which was straight-forwardly task oriented. Besides which he felt more comfortable with distance between the students and himself. He felt that the students saw him as a threat no matter what he did and that they accepted the ideas and orientations which he wanted to give them only through a process of "identification with the aggressor." Consequently, Mr. D was very pessimistic about ever being able to establish his image of an effective teaching-learning interaction because there were always too many obstacles in the way. He believed that trying to establish such an interaction involved too much energy and he felt uncomfortably like a captain abandoning his sinking ship.

We must backtrack now and pick up the other thread of our narration. At the end of phase two the students felt abandoned by Mr. D to perceived threats from within and without. In phase three Mr. D's permissiveness, support and interest provided the students with an opportunity to express themselves without fear of ridicule or rejection. He fostered motivation for student activity by prodding and coaxing, by posing challenging problems and by delegating to the students a good deal of responsibility for adequately dealing with the course material. He also fostered the students' motivation by emphasizing their independence and critical faculties. Mr. D facilitated their task engagement by nurturing ego syntonic images of themselves; this was opposed to the ego alien images of dependent and weak or impulse-laden and aggressive children which were salient in the first two phases. The students' high scores on I+ Enactment reflected their reaction to task problems and goals when the students were not preoccupied with the defensive strategies against internally or externally originated attacks on their self-esteem and self-images. This factor captured those times when the predominant thrust of student energy could be devoted to finding channels for productive task engagement because the teaching-learning interaction, for a time, was in a state of constructive management of interpersonal difficulties.

It should be emphasized now that the new college student is confronted with a larger and more complicated world than that which he has known before. He faces the challenge of the college community at a time, as Erikson in his writings on identify formation has so convincingly described (1956, 1959), when his image of himself and his self-esteem are being reinforced both through the work he does and through the recognition of that work by those around him in legitimate positions of authority. For the student every opportunity to test out and extend his abilities in every class is felt as a crucially important challenge to and test of his capacity to be in the company of those around him. Consequently, when the opportunity is provided for the students to exercise their abilities in front of an authority who appears to respect their attempts and who appreciates its importance to them, chances are they will be motivated to strive for the type of "dialogue" which Mr. D desired. An example of this sort of behavior which was captured by I+ Enactment occurred during a discussion of personality correlates to perceptual styles.

Mr. D: (replying to Floyd) Oh, I see. You're saying that if I.Q. is correlated, ah, if IQ is associated with 'field independence' and growth fostering parents are associated with 'field independence then that means that IQ is associated with child rearing. Yeah.

Morton: Well, yeah, but correlation doesn't necessarily imply causation.

Mr. D: Yeah. I think that's the point. However, if we go into your original assumption which is that that thing that is causing it is I.Q.

Morton: It's correlated with it. You could simply say that, ah, these two classifications aren't valid.

Mr. D: What's that? I don't understand your point.

Morton: It's just correlated, it's not necessarily caused.

Mr. D: Your earlier thing, the point that I was trying to make...independence-dependence is causing I.Q.

Morton: Well, I would simply say there might be a correlation, but one doesn't necessarily cause the other.

Besides capturing the students' independence from interpersonal concerns I+ Enactment also reflected their readiness to model their work attitudes and behavior after a (reciprocally) respected and appreciated teacher. However, their tendency to assume Mr. D's modes of and standards for work accentuated Mr. D's conflicting feelings over delegating authority and responsibility. While he enjoyed increased student independence, their attempts to take on aspects of his style and to often second guess him exacerbated his discomfort with close relationships. An example of what Mr. D felt as an intrusion on his central position in the class occurred during the same discussion of personality correlates to perceptual styles:

Mr. D: Let's pick up on that child training thing. Floyd, do you want to enlarge on that point you made about the kinds of mothers?

Floyd: Well, I don't remember the particular details it gave but he did have two controls. One was for 'field dependent' mothers and one for 'field independent' mothers...

Mr. D: Yeah, Eugene?

Eugene: As I remember it he had interviewers go to the parents of these children. These interviewers did not know the scores of these children. I think they used four questions in four methods of classifications. One had to do with whether the mother rewarded the children for intuitive or his own thinking. There were four forms of...

Mr. D: (with irritation) Yeah, there were general, there were four forms of. I don't remember the details. But the important thing to remember is...

As Mr. D became increasingly disaffected with the students' foray into his role styles the students' latent gripes also began to re-emerge. The delight they felt in Mr. D's more tolerant attitude shifted from a source of motivation for task engagement to an opportunity for expressing dormant tensions and hostilities. Neither the students nor Mr. D desired a return to the turmoil that they underwent in the early sessions. Consequently, there occurred a covert realignment of interpersonal relationships and interaction patterns in order to avoid a renewed outbreak of strife. For the students, I+ Enactment shaded into a new set of relationships with Mr. D, characterized by more dependence but also more tranquility. The students' high scores on II+ Consent captured the subtle shift from identification with Mr D in the service of task productivity to emulation of and submission to him as a powerful and admired figure. Mr. D's growing reassertion of authority complemented the students' new mood.

Teacher and students had been together for some time and their images of each other had become more inclusive and complex (even if the accuracy of these images hadn't increased commensurately). On the one hand, Mr. D was ready to be more tolerant of student dependency if it decreased the possibility of interpersonal conflict and if the students manifested their dependency by trying to gain his support through displaying the skills and knowledge he had given them. On the other hand, the students found Mr. D's dominance more attractive because they now saw it as a benevolent authoritativeness. He was someone they wished to please and in turn they expected to be recognized and rewarded. A feeling covertly had developed that Mr. D's "dialogue" was too prone to strife; there was too much potential for personal confrontation which encompassed more than merely the opposition of ideas. For the students the feeling of discrepancy between their abilities and those of Mr. D was accentuated by a new and potentially uncomfortable topic of psychodynamics and personality development. While there was a notable absence of interpersonal tensions and class quarreling, there was also an equally noticeable absence of the testing out of student skills that had occurred earlier -- which is so important in building and integrating a strong work identity. II+ Consent reflected the students' entrapment in their own strategem for avoiding interpersonal problems when they became preoccupied with being good imitators and sacrificed the opportunity to experience the pleasure of their own self-affirmations. An example of the students' avoidance of their own careful thinking through a task problem in deference to Mr. D came during a discussion of Freudian symbolism. Mr. D had quoted Louis Carroll's poem, "The Jabberwocky," and was replying to student disagreements with the psychoanalytic interpretations he had made:

Mr. D: I think you're not thinking about the poem. I think you're thinking about all sorts of extraneous matters like what's the poem about? Somebody tell me the plot.

Students: (anxious laughter).
Mr. D: Margaret?
Margaret: Well, it's on a family situation. But the father is talking to the son. He tells him about this dragon coming, and he goes out and kills this dragon.
Mr. D: Yeah.
Margaret: But, but the whole thing is sort of similar, um, with the father-son relationship and the dangers from the outside world.
Mr. D: Yeah, I think that's a pretty good explication of the plot.

Study of Individual Students

It is questionnable whether the harmony reflected by II+ Consent can be more than temporary. Once again, however, we will leave the progress of the teaching-learning interaction in order to fill out our picture of the student factors by describing the students who best characterized them. Morton characterized the independence component of I+ Enactment. He was older than the rest of the students and apparently had more worldly experience. Morton had a strong and confident self-image based on his "informal education" as a merchant seaman. Although he felt endowed with more inner resources than most of the other students he didn't flaunt them. Rather, he felt challenged to master the "formal education" which Mr. D represented. He didn't feel the same disappointment over unsatisfied expectations and needs and the resultant resentment toward Mr. D that most of the other students felt. He preferred the "dialogues" that Mr. D also desired. Morton wanted the student-teacher interchanges to be like "a friendly game of chess," the pitting of two minds against each other. Another reason for disavowing any negative feelings toward Mr. D was that Morton didn't like to recognize any weakness or needs in himself. He did admit to a strong desire to achieve but tended to intellectualize away this as well as most uncomfortable feelings. In this and other respects he was quite similar to Mr. D. Both of them preferred interpersonal relationships, in the classroom at least, to be solely on an intellectual, task-oriented plane. Morton, like Mr. D, had definite ideas and opinions and he critically examined things, but he refused to become embroiled in an emotional interchange when he had the alternative of taking an objective uncommitted position. As a result of Morton's ability to form a relationship with Mr. D which was relatively unencumbered by expectations and needs that the latter wouldn't accept, he was able to make a fairly accurate assessment of the position of teacher and students in relation to one another. Consequently, he felt as uncertain as Mr. D about what sort of teacher-student relationships would be most productive. He was critical of what he saw as Mr. D's aloofness and condescension: "He doesn't attempt to become one of us." But he also sympathized with Mr. D's problems and said that he wouldn't know where to draw the lines if he were teaching.

Morton was especially pleased over his (correct) belief that Mr. D liked him more than the other male students. He thought that the principal reason for this was what he perceived as Mr. D's reliance on him to participate when others wouldn't. Morton saw that Mr. D didn't like to plead for class participation and believed that the latter was impressed with and grateful for his assistance. In this class a good deal of Morton's self-image and self-esteem was built on the belief that he was someone to be counted on when needed. Morton was able to capitalize on the fact that he was older and more advanced in his student career than the others. His needs, fears, and expectations differed enough from the other students so that he was not as sensitive as they to Mr. D's criticisms. Consequently, Morton was able to take advantage of the many task facilitatory qualities that Mr. D could offer, when not subject to undue pressure from students, in order to forge a mutually responsible relationship with a respected authority.

While Morton characterized the independence component of I+ Enactment, Eugene exemplified its other component, identification. Eugene saw the formal goals of the course as the attainment of knowledge about psychology's traditions and schools and "...with what you can identify yourself with." Since for him " Mr. D...represents the class and the course," it was no surprise that Eugene energetically tried to model himself after his teacher. Initially, Eugene saw many similarities in attitudes and behavior between himself and Mr. D. His perception of these apparent similarities was gradually eroded as he and Mr. D showed an increasing dislike for each other. As time passed Eugene felt increasingly that Mr. D was "lacksidasical," "arbitrary" and "confused." For Eugene who prized organization these were especially biting criticisms. His dislike for Mr. D stemmed from his growing frustration and hurt over Mr. D's rebukes and criticisms. Mr. D, on the other hand, was increasingly uncomfortable and angry over Eugene's enthusiastic attempts not only to please but to be just like him. Eugene wanted his teacher to be "enthusiastic," "approachable" and "available." He wanted Mr. D to be friendly and to reciprocate the offers of friendship from his students both in and out of the class. Eugene's mode of I+ Enactment necessitated that there be almost no limits on the degree ot interpersonal closeness allowable and tolerable between teacher and students. Mr. D could not tolerate this and was unable to facilitate whatever work potential was available in this type of relationship.

The description of II+ Consent emphasized the students' emulation of and submission to Mr. D. Walter did not completely fit this characterization because, perhaps, a closer look at one student's portrayal reveals the mixed feelings that lay behind behavior reflected by this factor. Walter said that he had a strong desire to achieve and liked to get something out of every class. He felt that he was doing very well in the course and that Mr. D liked him. Walter admired and respected Mr. D's teaching style and found a strong source of motivation in the latter's hard-headed intellectual approach; there was "no wishy washy stuff." He felt that Mr. D "let's us work out the main principles from the examples" and he got a great deal of "satisfaction" for being rewarded for correct answers and productive thought. However, Walter thought that Mr. D was "too domineering" and that he tried to quench those students who didn't agree with his point of view. Furthermore, Walter felt "shot down" after giving an unacceptable answer and he believed that Mr. D didn't have much respect for the students. But he just kept on "plugging away" until things were better between him and Mr. D.

Overshadowing Walter's mixed feelings about Mr. D was his conception of the ideal teaching-learning interaction: a class oriented toward discussion with teacher leading and the students able to lean on him. The teacher would be the "leader guiding the students to the right answers." Walter preferred a purely task-oriented interaction without the intrusions of emotional concerns. Mr. D appeared to offer this and Walter was willing to overlook all else in order to accept it. He seemed to almost purposefully ignore what he felt were Mr. D's failings in return for the latter's protection from potentially uncomfortable interpersonal concerns. Consequently, in the classroom Walter was able to preoccupy himself solely with those attributes of Mr. D which were seen as admirable. He was successfully able to disassociate his criticisms of Mr. D from his admiration. The result, as revealed in his classroom behavior, was a form of intellectualized adulation, which fostered Walter's involvement in task activities, but which strongly inhibited the exploration of his own potentialities.

Summary

In phase three Mr. D tried once and for all to reconcile his conflicting feelings about the degree of power to maintain and about the degree of trust and responsibility he was willing to grant the students. As a result of his experience in the early sessions Mr. D showed more appreciation for the crucial role of interpersonal relations in the classroom. He attempted to devote more energy to harnessing student emotion and motivation in the service of task engagement. The strategies he used towards this end included both giving the students a greater share in class activities and loosening up his own interpersonal style, in terms of empathizing with student needs and displaying a broader representation of his own thoughts and feelings. Mr. D, however, was not very successful in finding a harmonious synthesis of his own emotions, needs and impulses with his cognitive goals. Consequently, he never was really able to maintain a flexible stance in relation to the varied pressures directed toward him by students who had been given some freedom of expression. The students had responded to Mr. D's overtures for more freedom and involvement with a great deal of enthusiasm. However, this enthusiasm was manifested in a variety of ways, including various ways of engaging in productive task activity and renewed manifestations of diverse expectations, needs and fears. In order to handle the numerous sorts of interactions manifested in a classroom where all -- or at least most -- of the students' modes of establishing relationships are being acknowledged, the teacher must react somewhat like a casino dealer who runs a number of different games at once. Because this teacher was never certain that he wanted to run any game but his own and because he soon tired of trying to run a number of games, Mr. D gradually began to reaffirm the authority and interpersonal distance which he had originally maintained. The students also discovered that it took hard and often uncomfortable work to be a colleague and a comrade to their teacher.

Consequently, they tacitly consented to Mr. D's renewed hegonomy. The phase ended with the teacher and students once again trying to establish a purely task-oriented teaching-learning interaction. Their experiences in phase three, however, had modified their relationships to each other. On the one hand, Mr. D was more willing to accept student dependency if it was manifested by their attempts to emulate his work style in order to gain his recognition. On the other hand, the students were more willing to acede to Mr. D's authority if it was manifested in a benevolent manner.

PHASE FOUR

Phase Overview

Phase Four included sessions 19-24. The manifestation of the two major tones of this phase were separated by the midterm, which occurred in session 21. Before the examination teacher-student relations were beginning to look reminiscent of the early sessions of the class. Accusations were being hurled back and forth about what was to be expected of and avoided by both teacher and students and each side accused the other of failing to live up to their (or his) responsibilities. The students were pressing Mr. D for more friendliness and Mr. D again was sending them confusing and contradictory appeals for student ideas and opinions "that we can attack." In addition, the students were expressing distress over Mr. D's abandonment of attempts to establish relations of colleagueship and comradeship with them. Mr. D, for his part, was preparing them for the mid-term examination by alternating between giving helpful and friendly suggestions and berating and threatening the students with dire consequences if they didn't do as he expected.

As it turned out the students did exceptionally well on the examination and Mr. D lavished them with praise. During the post-examination period of renewed confidence, however, a new and unexpected theme emerged. Mr. D introduced it by stating that the final examination would be much more difficult so that he could discriminate between A and B students, and he moralized against those students who would complain about the necessity for him to provide the formal "System" with fine grade distinctions between students. This new theme, while never explicitly stated, was most clearly symbolized during a discussion of one of the examination questions concerning Skinnerian learning theories. Mr. D got off on an anecdote about how both sides during World War II trained animals to sacrifice themselves by directing weapons at the army. Considering the mood of the teaching-learning interaction at this time the implication clearly was that the less able students must be sacrificed to the educational system so that the more able students could be recognized and advanced. Two other correlaries to this theme also emerged during other discussions of the examination questions. Again, while they never were stated explicitly, their presence markedly affected the mood of the teaching-learning interaction. During a discussion of n-achievement in Negro children in families with and without fathers, Mr. D emphasized the need for the presence of a strong authority figure in order to evoke achievement strivings in those under his influence. Along with that correlary theme there appeared in Mr. D's comments, justifications and denials of any responsibility for what the formal academic system forced him to do.

It was apparent to the students that for whatever reasons, Mr. D was establishing a formally impersonal and somewhat callous position of authority for himself. In a sense he was abandoning all attempts to forge a teaching-learning interaction that would be satisfying to and productive for both him and the students. While the more assertive students strongly resisted Mr. D's attempts to force on them his new conceptions of the teaching-learning interaction, most of the students were too passive to resist this new coerciveness. The phase ended on a note of mutual irritability and withdrawal. When prodded into talking, the students indirectly expressed their distress in task discussions to the detriment of the quality of the discussions. Mr. D, in turn, insulated himself from student appeals by barricading himself behind a mass of empirical evidence and thoughts of outside authorities.

Factor Summary

Table 4

Teacher	Students
I	
II+ (Role Satisfaction-rising)	
III- (Formality-rising) + Punitive-hi	+ Discouragement-hi
IV	
V	
VI	- Unresponsive-hi
VII	

As the phase overview suggests there were drastic fluctuations in thought, feeling and behavior in this phase. Corresponding to this were great fluctuations in the scores for numerous factors. In our descriptions of the class, however, we have drawn upon only those factors whose scores were high for a sufficient period of time to markedly influence the general tone of the phase. In keeping with the strategy we found in this phase one teacher factor and two student factors prominent enough to note. Teacher factor IV+ Punitiveness captured Mr. D's reaction to the actual and uncomfortable teacher-student "dialogue" that had developed in phase three which destroyed his image of the ideal dialogue. He was angry at the students for not being able to hold up their end of his expectations even though he labored mightily to foster a relationship of colleagueship and comradeship. He was also angry at himself for being so uncomfortable in his attempts to establish such a relationship. He was also very uncertain about what sort of relationship would best facilitate a productive teaching-learning interaction and if he could ever feel comfortable in such a relationship. Mr. D's high scores on IV+ Punitive reflected his attempts to avoid the angry and anxious feelings evoked by his uncertainties through transforming those personal feelings into impersonal accusations at the students for not living up to the standards of a greater authority than himself, e.g., the academic community. The students' hopes for a better relationship were dashed by Mr. D's withdrawal of encouragement and support. Their high scores on VI- Unresponsive reflected the students' matching of Mr. D's withdrawal with their own extensive disengagement from the teaching-learning interaction. If they had to act at all the students wanted their activity to be as uninvolved and noncommital as possible. Their primary aim was to mollify Mr. D in order to avoid any painful blows to their self-esteem and to gain whatever security they could in this highly threatening situation. The students' high scores on IV+ Discouragement indicated that once again the students were acutely aware of the contrast in power, authority and skills between Mr. D and themselves. In Phase Three their reliance on Mr. D's guidance and support and their emotional attachments to him had grown steadily. Perhaps if Mr. D had remained a benevolent authority the students could have used their attachments to him to gain more self-reliance. However, with Mr. D again very threatening the students' reliance on and attachments to him made them that much more terrified of him. Furthermore, they had invested too much of themselves in him to be able to muster any sort of effective resistance against his accusations. IV+ Discouragement reflected their quite poignant expressions of distress, as well as their feelings of helplessness to make up for what they saw -- and for what Mr. D fostered -- as their failings as students.

Analysis of Phase Four

As we mentioned in the factor summary the patterns of teacher and student factor scores in Phase Four were relatively unstable. The cause of this instability was marked fluctuations in the teacher-student relationships. The students were generally reacting to Mr. D's new model with less of the positive feeling and energetic activity that characterized them in the previous phase. However, during this time they also did very well on the midterm; the result was that for a short time they behaved with renewed confidence and vigor. Mr. D was in the process of reassessing his own teaching style after his unsuccessful experience with colleagueship and comradeship. At no other time did Mr. D have as strong a sense of lack of direction in the class as he did now. Consequently, his relations to the students showed a great deal of inconsistency. As we mentioned before, however, in discussing the classroom we will only deal with factors that were consistent enough to reflect prominent and enduring modes in the class.

Phase Four began with Mr. D feeling the need to escape from the role egalitarian and interpersonally close relationships which he had facilitated in Phase Three. The dialogue that he had established with his students hadn't lived up to his image of the ideal teacher-student interaction. Furthermore, none of the students lived up to his idealized image of the adequate student. Mr. D was uncertain about who was to blame for what he saw as the failure of a successful teaching-learning interaction to be established. He felt the adequacy of his own teaching abilities to be in question and the coming midterm, while a test of student competence, was a further challenge to his self-esteem. This was the case because their performance would be seen by him as a function of his teaching competence. As if these concerns were not enough there were additional pressures on Mr. D. The class was beginning to deal with highly charged course material, like race relations, the psycho- and sociodynamics of prejudice and Freudian personality theory. Mr. D was becoming increasingly uncomfortable over having to defend certain positions against student resistance, positions which were also a cause of uncertainty within himself but which he felt obligated to defend in order to maintain his self-images as a competent authority in the field and as a social and political liberal. Furthermore, the students again were beginning to show signs of passivity and inactivity, and Mr. D realized that the issues of his dominance and student dependency were going to have to be faced anew. Mr. D's rising scores on IV+ Punitive reflected his need to put the blame for the whole dissatisfying situation outside of himself.

The students' unexpectedly good performance on the midterm boosted Mr. D's confidence. This performance made Mr. D temporarily more optimistic about student capabilities which provided him with a means of slowing his movement toward increasing dominance. He felt that the history of tension and hostility in his class had made the students "hardened" and able to take the midterm and any other challenges in stride. However, the students' accomplishments on the midterm posed a new and disturbing issue for Mr. D. His behavior after the midterm suggested that he was bothered by the effects that the brief period of interpersonally close and role egalitarian behavior had on the students' performance. Mr. D had already decided that he could not effectively handle student-teacher relationships characterized by that sort of behavior. Consequently, he had to convince himself that his more task-oriented and impersonal style really played a more significant role in the students' excellent performance on the midterm than the style which he found that he could not successfully handle.

Mr. D was angry and disappointed with the students both for not holding up their part of his expectations for the ideal teacher-student interaction before the midterm examination and for their increasing expressions of resistance to and discomfort with the emotionally charged course material after the midterm. Yet, he respected the students for their good showing on the examination. Mr. D also was angry at himself both for having lost a sense of direction for the class and for his own anxieties over how and if he could establish a successful teaching-learning interaction. In addition, it is quite possible that Mr. D had harbored a latent resentment over the students' enthusiastic response to his self-deprecating and counter-dominant behavior back in Phase Three. Along with the stirring up of a host of uncomfortable negative feelings and doubts, it was not unlikely that dormant resentment would also be surfaced. These were very intense and personal concerns in addition to subjecting Mr. D to a confusing barrage of thoughts and feelings. Both in order to maintain his own sense of well being and in order to maintain his image as a competent teacher, Mr. D had to relieve himself of the burden these concerns were placing on him. His high scores on IV+ Punitive after the midterm reflected the transforming of his personal negative feelings and anxieties into impersonal accusations at the students for not living up to the standards, expectations, and requirements of authorities and forces greater than those in the classroom. He accused the students of failing to show themselves worthy of being part of the social and academic system of which the classroom was only a part. This, however, was not necessarily a planful strategy by Mr. D; rather, it was both one component of his general, if confusing, attempt to make a success of the teacher-learning interaction and an expression of his disillusionment over and disengagement from any close involvement in the classroom. His scores on IV+ Punitive also reflected another side of Mr. D's behavior which expressed his awareness that the students weren't solely responsible for the classroom difficulties and his consequent attempts to rectify unwarranted attacks on the students.

The diverse aspects of Mr. D's IV+ Punitive behavior, including his confusing array of accusations and directives alongside appeals for honest and open expressions of thought and feeling, were most clearly seen in the highly charged discussions of course material dealing with racial prejudice and Freudian personality theories. A good example occured during a heated discussion of a course lecture (attended by all the sections) where a simulated meeting took place between the mayor of a hypothetical city hit by racial unrest and representatives of civil rights group advocating various approaches. After the discussion Mr. D summed up his impressions of it: "I guess the thing that strikes me about this whole discussion is the similarity between this battle in the class with me and the battle between the mayor and panelists. I've been getting all the same kinds, exactly the same kinds of things I got from the mayor (Mr. D had been one of the panelists): 'It takes time, you need change in their hearts, issues aren't clear, you don't want to make people unhappy.' And, uh, I guess this is perhaps what I should have expected but, ah, I supposed what I'd like you to take away from this discussion is just the tendency to think about your own position a little more. I'm certainly not going to tell you what position is right. I don't think that's my role. But, ah, I kind of have the impression that many of our discussions of psychological issues since they do verge on discussions of, ah, moral issues -- I think it makes it very necessary to know what we assume about the world, how we assume people interact. I'd rather have you at least know what your bias is before you start these discussions. I think the assumptions I've been running this class under are very different than most of the people in it. And this probably results in considerable difficulties. And I think you should bring this up. If people think I'm saying things that don't ring true, not only at a scientific level but at a personal level, please say something. And, ah, I would gather from this discussion, like the mayor, the response to the psychologist is not entirely the result of an objective evaluation of the evidence, but to a certain extent, is a result of how you have a feeling about the subject. These are important issues."

The students were confused and intimidated by Mr. D's withdrawal of support and by his contradictory calls for and attacks on student contributions. They were acutely aware of the frightening threats with which they were faced: Not only the possibility of being shamed before fellow students; but also the chance of being proven unworthy to be a part of the academic community. They wanted to avoid these potential blows to their self-esteem and self-images as competent students. The students' high scores on VI+ Unresponsive reflected their withdrawal from threatening student-teacher relations and, consequently, disengagement from task activities. At this point their primary objective as students was to mollify Mr. D while staying as uninvolved and noncommital as possible. In illustrating the collapse of any productive teaching-learning interaction, VI-Unresponsive captured the close interdependence of mutually satisfying teacher-student relationships and involved task engagement. Mr. D could prod and coax the students into contributing; however, because they had withdrawn from threatening teacher-student relationships the students' ideas and opinions were really camouflage behind which hid their real thoughts and feelings. A good example of how student withdrawal from classroom involvements could stultify a potentially meaningful teaching-learning interaction occurred during the discussion of civil rights groups and their various approaches. Floyd, the only Negro in the class, had remained silent throughout the discussion. When he finally did voice a lengthy opinion it was devoid of personal involvement and, consequently, lacked any meaningful contribution that he, as a Negro, could have made.

Joe: I think that both the two positions -- the self-improvement and the laws -- would probably be more effective than merely one or the other.

Mr. D: How much would that help the lower class Negro in Harlem?

Students: (Silence)

Mr. D: Who is unemployed, 23 years old, and didn't finish high school?

Students: (Silence)

Floyd: It's kind of hard for me to make any sort of, ah, subjective judgment right here because I wasn't at the lectures so I don't know exactly what was presented under the general topic headings here: self-improvement, rational ego, moral confrontation and what not. But from what I can glean from listening to what everybody else is saying, I don't really think that these are, ah, all these general headings here could really be considered the pertinent, ah, you know, the problems that you could be trying to solve in any particular situation.

A short time later Mr. D and Floyd were still trying to come to a consensus about what point Floyd was making.

Mr. D: You're saying basically, I guess, that the first two or three approaches really don't talk to these people.

Floyd: Really, yes. I guess I was coming around to it. But I really don't know what went into the particulars of each of these topics so I couldn't really say.

During the discussion of socially relevant topics, such as race relations and the nature of prejudice, Mr. D attempted to rebuild some sort of teaching-learning interaction while hiding his concern over student inactivity behind an appeal for the students to show some social responsibility by dealing with these important subjects. The students were willing to placate Mr. D with some activity, but they resisted his attempts to really involve them in any sort of interaction where they would have to commit themselves. For example, during the discussion of various civil rights groups' approaches, Mr. D called on each student who hadn't spoken.

Mr. D: Gus, what do you think?
Gus: (Silence)
Mr. D: Which route would you take if you had the choice?
Gus: Well, I see the NAACP groups and such as trying to do a good thing, but, um, well...
Mr. D: Of course, the other option is that you don't have to take any of these approaches. You know, maybe you don't think the idea of social protest, social movement is good at all.
Gus: They are trying to accomplish something good, but it's more or less, ah, the deal about trying to legislate morality. It's, ah, they do have rights for their stand, but it's, ah, you know. You always have people who resent any kind of intrusion on the system as it is. Oh sure, they would put it down on paper, but they don't respect the laws so it winds up not doing much good. Or they get token support for this and I don't know how much good all that actually accomplishes.
Mr. D: So you've, ah, I guess what I hear you arguing against is the NAACP.
Gus: Well, no (anxious laugh). I think it's a good thing.

In discussion the second and final factor that characterized student behavior in Phase Four we will also be including behavior from the first two sessions in Phase Five. We included the factor scores from those two sessions because the sessions around the end of Phase Four and beginning of Phase Five provide both an apex of the issues in Phase Four and a transition into the conditions which developed in the later sessions of the last and very lengthy phase. Sessions 25 and 26 were the first two sessions of Phase Five and in these two sessions Mr. D's behavior drove the students further into states of dependency and distress. In the former session the students were subjects in a class experiment which was part of a research study that Mr. D was conducting and were told to act only when Mr. D instructed them to. In the latter session the class discussed a homework assignment on motivation concepts, in which examples concerned the interaction between student motivations and teaching methods. During this session Mr. D pointed out that students can be motivated by fear of failure as well as n-achievement.

The students' withdrawal from the teaching-learning interaction was motivated, to a great extent, by what they again saw as the acute contrast in authority, power and skills between themselves and Mr. D. Because of his increasing callousness and impersonality, Mr. D's strengths and resources, which the students had been awed by and wanted to emulate when he was benevolent, had now become terrifying threats. The students' high scores on IV+ Discouragement reflected their feelings of helplessness to influence the nature of the teaching-learning interaction and teacher-student relationship. During the brief period of colleagueship and comradeship the students, motivated by their respect and admiration for Mr. D, had invested a great deal of their self-esteem in Mr. D's evaluations of them. Now Mr. D's reproaches left them with feelings of shame and guilt with which they were not able to cope. As was the case earlier the students' high scores on IV+ Discouragement reflected their tendency to blame themselves for any inadequacies in the class discussions. Periods of silence and miscommunications or difficulties in understanding the topic material were seen as personal failings and not as task and interpersonal problems with which both teacher and students needed to deal. An example of the students' tendency to accept the blame for any task problems occurred while Mr. D was preparing to run an experiment in which the students were subjects. He was checking to see if they had the instructions correct.

Mr. D: How many people are having a lot of trouble with the time?
Students: (Show of hands)
Mr. D: (in a tired voice) Some trouble?
Eugene: I'm having a little trouble writing them down. You know, writing down what is the central concept.
Mr. D: (Silence)
Eugene: (in a businesslike tone, commenting on the experiment instructions) It's efficient.
Students: (Anxious laughter)
Mr. D: It's efficient, okay.

The students' frustration and distress motivated some incipient signs of rebellion against what they saw as the tyranny of Mr. D and the system that he was representing. Considering the atmosphere of extreme wariness and passivity present in the class at this time, even Eugene's small resistance to the structure of the task suggested latent feelings of anger and rebelliousness. However, the students saw Mr. D as so powerful and themselves as so weak that these feelings were quickly suppressed at the first indication of irritation from Mr. D. Furthermore, the feelings of respect for and admiration of Mr. D which the students experienced when he was more benevolent now contributed to feelings of guilt in reaction to the anger that they presently felt toward him. Eugene's compliment of Mr. D's instructions exemplifies the students' need to make reparation for any overt or covert negative feelings they may have had toward Mr. D.

Study of Individual Students

In returning again to examine some of the intrapsychic antecedents to the behavior reflected by the student factors, we first will attempt to explicate what in the discussion on civil rights Gus' statement about any "intrusion on the system" meant in terms of interpersonal concerns. Gus was very wary of any possible intrusions into his precarious feelings of self-esteem and security. He frequently manifested the kinds of behavior characterized by VI- Unresponsive. He talked in a nervous and apologetic manner, as if not wanting to impose his thoughts on Mr. D. Gus was not very confident about his own resources and was uncomfortable in interpersonal interactions. He said that he "(feels) uncomfortable with people" and that he was "not too swift at starting a conversation, I guess." He felt especially uncomfortable with "strangers;" the word he used to describe Mr. D. This suggested the distance that he placed between himself and Mr. D, which further was indicated by seeing himself as "sort of a partial observer" in the classroom. Gus very much needed this noninvolvement for protection from the danger to his feelings of security that he sensed in the classroom but that he could not admit to. He painted a rosy picture of the teaching-learning interaction in which he saw Mr. D satisfied with the students and the discussion running"pretty well." He believed that the students "aren't afraid to say something and get chewed out for it," and that the teacher and students were "more or less working together." Yet, in describing how Mr. D got what he wanted out of the students without imposing on them, Gus pictured Mr. D as "forceful but not harsh" (with) a feeling of power behind him like a gun or sword." By extensively denying any sort of interpersonal friction Gus was able to avoid expressing his own anxieties in the classroom. Gus said that he was always careful about being correct when he spoke and attributed it to his engineering orientation. However, his cautiousness most likely also included both a wariness that the potentially aggressive threats embodied in his images of Mr. D's "powers" were not directed against him, and at the same time a denial that there was any threat at all.

Eugene conspicuously exemplified IV+ Discouragement in Phase Four. While we ran into him in our description of I+ Enactment, he was characterized best by the present set of feelings and behaviors. Eugene was sincere by somewhat overly enthusiastic and he had a formality about him that made him appear almost pompous. Eugene was initially attracted to Mr. D's appearance and behavior and, as we previously noted, attempted to model himself after Mr. D. He saw Mr. D as a "Napoleonic figure," strong and organized. Eugene initially was excited about what the latter could offer him. Mr. D, however, was put off by Eugene's overtures for comradeship and responded with ridicule and rebuffs. Eugene's first and last reactions to this aloofness were anger, confusion and despair. He was "pissed off" and saw Mr. D as an aggressive and dogmatic figure: "He slights you unless you are exact." However, for whatever reasons in his past Eugene's primary interpersonal strategy was based on the notion that you can never confront a dissatisfying authority figure but only try harder to join him. Also, he could not feel comfortable criticizing someone he felt such an affinity to. Consequently, Eugene spent the term resenting the hurts that he felt Mr. D inflicted upon him. He felt like he was being "tolerated rather than aided, so to hell with him..." He liked neither Mr. D's criticisms -- "I don't like being laughed at" -- nor Mr. D's aloofness. Eugene was never able to confront Mr. D with his grievances and he was never able to free himself of the wish to gain Mr. D's favor. He felt disappointed, frustrated and angry; but he also felt confused and guilty over not being able to maintain satisfying relationships with Mr. D and over not being able to make more productive use of the classroom experience. Eugene was perpetually in a state of unstable equilibrium: On the one hand, unable to struggle free of his attraction to Mr. D; on the other hand, unable to submit completely to Mr. D's demands which would have entailed giving up his enthusiastic desire for comradeship. The result for Eugene was vascillation between a capitulation to Mr. D's desire for impersonal relationships between teacher and students and an uncomfortable, if passive, resistance.

Summary

In Phase Four Mr. D saw his students validate, to some extent, his teaching effectiveness by their good performance on the midterm examination. However, this did not long afford him much comfort because he was deeply uncertain about what aspects of the diverse role and interpersonal relations that he had attempted with his students had contributed to his teaching effectiveness. In addition, he was disillusioned with his ability to handle comfortably the teaching-learning interaction, and he desired to disengage from any involved teacher-student relationships which he saw as a perpetual interpersonal struggle. Mr. D's need to avoid recognizing in his own uncomfortable feelings about the teaching-learning interaction and to unburden himself of any responsibility for it led him to shift a good deal of blame for any difficulties onto the students. The shifting of blame took the form of accusing the students of failing to meet the standards and expectations of the larger academic system and of denying any responsibility for the fate of those students who consistently, as Mr. D saw it, failed to meet the larger system's requirements.

Mr. D presented the formal academic system, of which the class was a part, as a threatening yet crucially important evaluator of the students' capabilities to continue as members of the academic community. In addition, he presented himself as merely the impersonal representative of the larger system. The detrimental effects of such a stance on a potentially productive teaching-learning interaction were indicated by the students' reactions. As a result of Mr. D's accusations, the students felt hopelessly unable to live up to the values, ideals and traditions that give continuity to the teaching-learning interaction. Consequently, their energy was used not to explore their own potentialities, but to cope with their feelings of distress and to prove that they at least could meet the requirements of existent academic convention and tradition. At the same time the students' need to avoid the discomfort produced by Mr. D's punitiveness and growing impersonality led them into their own withdrawal from any sort of involved teacher-student relations. This interpersonal withdrawal made it impossible for the students to devote their full energies to the teaching-learning interaction; consequently, their withdrawal was followed by a disengagement from any productive task activities. Phase Four ended with both teacher and students barricaded behind their respective interpersonal defenses and, consequently, unable to engage in any meaningful task behavior. Phase Five is concerned with the interpersonal adjustments made both to this quite tense situation and to the approaching end of the course.

PHASE FIVE

Phase Overview

Phase Five was the last and lengthiest phase including sessions 25-39. The tone of this phase was set by Mr. D's increasing control over all activity in the classroom. The simplest means by which he accomplished this was merely to talk more than anyone else. While Mr. D's lecturing was the predominant activity in this phase, his mixed feelings about it were indicated by his vascillation between either a cold, informal style or a warm, and friendly and casual style. The students grew increasingly passive and dependent on Mr. D to provide most of the stimulation needed to keep the teaching-learning interaction going. From the gradual rigidification of the teacher-student relationships into one of teacher-dominance and student-dependence, the final classroom themes emerged. Mr. D gradually entrenched himself into an impersonal style of lecturing, whereby he could avoid any personal confrontations with students by placing the indisputable weight of empirical evidence and thoughts of the experts between himself and the students. However much he enjoyed the absence of interpersonal conflict that resulted, Mr. D was dissatisfied with the concomitant student passivity. Consequently, in a number of ways he accused them of being unsatisfactory students. During discussions about the interrelationships of types of motivation and teacher methods and of the cognitive pressures in prejudicial thinking, Mr. D accused the students of being motivated more by fear of failure than anything else and, because of their provincial ways, of not appreciating what he had to offer them. During the discussions about personality theory, Mr. D accused them of being both too dependent on and too resentful of authority figures (e.g., their relating to Mr. D like an oedipal father) and of being conformists (i.e., "other-directed"). Mr. D repeatedly prodded and poked the students in this manner, always in the context of task discussions. But when the students responded with their thought and feelings or with angry denials of his accusations, Mr. D quickly retreated into impersonal lecturing or depreciated their contributions, e.g., their ideas were "not very interesting."

On the surface the students were reconciled to taking a back seat in the teaching-learning interaction. There were signs, however, that they still wanted to contribute more to task activity and that there were still important thoughts and feelings that hadn't been expressed. The students usually contributed where Mr. D provided the opportunity, but their task contributions were always colored by feelings of frustration and resentment over Mr. D's extreme hegonomy in the teaching-learning interaction and his accusations that they were the cause of it. Furthermore, the fact that the term was drawing to an end was thrust upon them by discussions about the final examination and the term papers. The students' feeling that things hadn't gone right in the class was accentuated by the pending end of the term, because they would not have the chance to resolve their difficulties with Mr. D. Their expressions of distress gradually began to carry the implications that Mr. D was teaching them but really didn't care about them. The dilemma facing the students was how to prepare for satisfactorily separating themselves from teacher-student relationships and a teaching-learning interaction that hadn't been satisfactorily established. (How this separation took place will be discussed later.) In the next to the last session Mr. D made his last contribution to the class in the form of a brilliant lecture on the socio-political and psychological dynamics in the southern tradition of prejudice. This lecture could easily be seen as a gift to the students in reparation for anything that the teaching-learning interaction had lacked. In the last session there were some final formalities to be taken care of, and then Mr. D said: "Okay, that's all."

Factor Summary

Table 5

Teacher	Students
I- Proactive-hi	
II+ Role Satisfaction-hi	- Contention-large spurt
III- Formality-hi	- Lo Concealment-hi
IV	- Low Discouragement-hi
V	- Low Challenge-hi + Support-hi
VI+ Display-hi	
VII	- Low Exhibition-rising

Because of the length of Phase Five, many different sorts of behavior occurred within the general tones just described. These different behaviors were indicated by the diverse factors which were prominent in this phase. By the beginning of Phase Five Mr. D no longer wanted any involvement in interpersonal relationships with the students because of the dissention and general discomfort it caused. His high scores on II+ Role Satisfaction reflected the adjustments that he made in the teaching-learning interaction in order to avoid such relationships. He increasingly took control of and responsibility for defining the task and interpersonal structures of the class. Mr. D did this by becoming more active as a lecturer, relying almost solely on his own wit and expertise to keep the students interested and provided with knowledge. Mr. D's active dominance over the teaching-learning interaction was manifested not only when he was lecturing but also when he was involved in interchanges with the students. When involved in discussions with the students his high scores on III- Formality reflected the way Mr. D forged a compromise between his original desire for a mutual "dialogue" and his desire to avoid the interpersonal problems involved in such an interchange. He tended to divorce students' ideas from the students themselves by responding only in terms of how a student's contribution could fit into Mr. D's lecture. The thoughts and feelings behind a student's contributions were ignored. In a short time Mr. D was talking much more than anyone else. His high scores on I- Proactive reflected the crystallization of a teaching style based on being very active, always in control and focused on the one-way giving of information. Mr. D felt most comfortable with this sort of relationship to the students and, consequently, felt better about and more friendly toward them. The friendliness he felt toward the students was, to a great extent, illusory because he was only friendly from a distance. In addition, Mr. D's belief that he could now satisfy student demands was based on his own satisfaction and not on any genuine attempt to explore student discontents. There were times when Mr. D felt especially confident about his abilities and those of his students. Mr. D's occasional high scores on VI+ Display reflected those times when he felt he had accomplished something in the teaching-learning interaction. Whether subtly in the course of interchanges between teacher and students or dramatically on their performance on some task, the students indicated that they had learned something.

Complementary to the crystallization of Mr. D's teaching style based on dominance, the students established their own style based on dependency and inactivity. Their rising scores on VII- Low Exhibition reflected the development of this style and they provided the background for the more sharply fluctuating student factor scores in this phase. The students' dependent behavior added to the superficial atmosphere of mutual satisfaction and tranquility. Their increasing reliance on Mr. D to run the show produced a comfortable atmosphere when he was in a benevolent mood. However, when he was behaving in a threatening manner -- although this occurred less frequently than previously -- their reliance on Mr. D made it much harder for the students to deal with him. Their high scores on V- Low Challenge reflected the consequences of the students no longer being in touch with their own resources. During periods when Mr. D was threatening all they were able to do was accept it as inevitable and withdraw into even more inactivity, feeling helpless to remedy the situation. Not all the students, however, were that passive. Some of the stronger males did assert themselves, as reflected by their high scores on II- Contention. Even these students didn't directly confront Mr. D; rather, they indirectly expressed their dissatisfactions through quarrels about task activities and course subject matter. There were occasionally signs that the students still hoped to establish genuine satisfying and productive relationship with Mr. D. This hope seemed to be the result of memories of the period of colleagueship and comradeship in Phase Three. The students' high scores on III- Low Concealment reflected those times when their timorous attempts to cope more actively with the teaching-learning interaction were combined with attempts, once again, to emulate Mr. D's skills, attitudes and desires for high standards. At other times, however, the students passively accepted what skills and knowledge Mr. D offered and they played an appreciative audience rather than potential imitators. Their high scores on VI+ Support reflected their attempts to capitalize on Mr. D's apparent satisfaction with the teaching-learning interaction by maneuvering into friendlier and more comfortable relationships with him. When the students were able to feel respect for Mr. D's skills and appreciate his friendliness, they also were often caught up in a surge of affection for him. Their high scores on IV- Low Discouragement reflected the students' feelings of safety, comfort and affection. In addition, the optimism which these feelings evoked led them to imagine that all their grievances ultimately would be dealt with to their satisfaction by Mr. D because he was such a benevolent and skillful fellow. All the students had to do was like him.

Analysis of Phase Five

By the end of Phase Four Mr. D felt "disappointed" with his students and "trapped" in the classroom. He most likely felt quite disappointed with himself also, although this would have been difficult for Mr. D to admit. However, these feelings were manifested in a gradual but radical shift in his whole approach to the teaching-learning interaction. This shift was indicated by the teacher factor poles which were prominent in Phase Five. Mr. D began to assume more and more control of and responsibility for the teaching-learning interaction, because he had found that trying to involve the students led to mutual expectations which created dissension and discomfort. His high scores on II+ Role Satisfaction signalled a transformation in Mr. D's conception of the ideal task group. The ideal teacher-student relationship now was one in which the teacher is dominant and there is only minimal student activity. By not putting student capabilities to the test, Mr. D was able to maintain the feeling that things were going smoothly and successfully. He was less critical of student contribution because he could rework the students' ideas in order to meet his own standards. II+ Role Satisfaction captured Mr. D's new feeling of benevolent dominance and the students' acquiescence to it. However, a long segment from the discussion about conflict paradigms indicated how the students were becoming shadows on the field where Mr. D was active almost by himself.

Mr. D: So in a conflict situation you are liable to have vascillation, anxiety and frustration.

Gloria: What is vascillation?

Mr. D: Going back and forth from one to another. Getting up, walking to the door and coming back.

Students: (Laugh)

Mr. D: There are various things that you can do about this particular conflict. On Friday we will discuss the various defense mechanisms that are useful in reducing conflict. One way that Lewin talks about in particular how to escape the conflict -- I'll just mention it in passing -- is 'escape from the field.' What happens if you can't make up your mind in a situation? Well, you just leave the field. Now how would you do that?

Students: Would you go to sleep?

Mr. D: Yeah, you would just go to sleep.

Students: (Laugh)

Mr. D: So there you are all conflicted about whether you should study your history first or your math first, and you are conflicted. So you fall asleep and solve the problem.

Students: (Chuckle)

Mr. D: When you change the conflict it's really an avoidance-avoidance conflict. (Aside) I wish I could think of an approach-approach, oh well, in any case if things get too tough you can always go to sleep or you can always get out of the room; in some way withdraw from the situation, escape from the field. That's one kind of conflict. What would be, it might be interesting to talk about what you could do to get around this particular conflict, other than just withdrawing, which is the simplest way.

Walter: Well, start evaluating your valance, like...

Mr. D: Yes, rationalization; that is, reevaluating: 'Well, I really don't care if I flunk this exam.' Or another way, well can anybody else think of any other ways you can deal with this particular conflict?

Students: (Silence)

Mr. D: Another way is you could deny -- 'Well, I really don't have to study -- I know this stuff anyway.' Well, there are lots of ways you could use to get around conflict situations. Now another possibility is...

Mr. D took increasing control of the nature and direction of interpersonal and task structures. He thereby set quite rigid demarcations on the type and extent of all activity in the classroom. This sort of situation was highlighted during the session where the students were subjects in Mr. D's experiment. Mr. D directed all activity and defined all modes of role interaction. The task and interpersonal structures which he set up made all conflict impossible. However, it also made any freedom of student expression impossible. Of course, this situation was atypical; but it was a prototype of the kind of teaching-learning interaction that Mr. D was fostering. He found satisfaction with a teaching-learning interaction that focusses on one component of his original goal and ignored another component. Mr. D aimed at non-emotional task productivity which entailed his domination over all classroom activity. Consequently, he increasingly disvalued and inhibited mutually active involvement and student autonomy.

Although Mr. D took over a major share of the responsibility for activity, he did not believe that lecturing was the most effective mode of teaching, especially in a class of this size. His image of the ideal teaching-learning interaction still had residues of his original desire for reciprocal, active task engagement. Consequently, in his interchanges with the students Mr. D developed a compromise between his goals of reciprocal activity and his desire for personal noninvolvement with the students. Mr. D's high scores on III+ Formality reflected his increasing tendency to deal with student ideas but not with the student themselves. This factor subtly differed from II+ Role Satisfaction in that it combined dominance with resistance to any attempts by students to inject themselves into the now impersonal teaching-learning interaction. The confluence of needs, expectations and fears that continually confronted both teacher and students were covered over by Mr. D in dealing with ideas and not with people. The discussions that took place between teacher and students were, in a sense, like the Walt Disney productions where both real persons and cartoon characters are in the story together. It was as if Mr. D, the real person, interacted with student contributions, the cartoon characters; the student contributions were given animation and life by real persons, but these contributions by themselves were not real. When a student attempted to inject himself into the discussion in order to either express a feeling or to elaborate on some idea which interested him, but was beyond the scope of immediate discussion, Mr. D quickly cut him off. An example of this occurred during a discussion of the results of Mr. D's experiment (where the students were subjects), in which the class was examining the cognitive processes involved.

Mr. D: So you were asked to make a hypothesis after each card was shown. Now what kind of hypothesis -- a couple of people can answer this question for me -- what kind of hypothesis did _you_ make after the first card was shown?

Eugene: I made a holist -- all except for the color of the card -- because it didn't take any word to just decide the color of the card. Because all you needed was one instance. But other than that I took square, I took small square, ah, small square, blue one.
Mr. D: Okay.
Eugene: And one...
Mr. D: You took essentially...
Eugene: One border...
Mr. D: Okay, ah...
Eugene: And I assumed that the color...
Mr. D: (Turning to another student) And what did you do?

An unfortunate consequence of dissociating students from their contributions was that the students were both emotionally and intellectual neglected. Mr. D used student ideas and opinions as contributions to his information giving, without attempting to facilitate student mastery over the material with which they were dealing. In general Mr. D became exceedingly insensitive to the states of task activity at any time in the classroom. He was no longer aware of when the students were having intellectual difficulties with the material and when they wanted to move faster. Also, he was insensitive to student moods that presented either emotional obstacles to work or facilitated it.

Elements of behavior captured by II+ Role Satisfaction and III- Formality crystallized into a new and enduring teacher style. Mr. D's high scores on I- Proactive reflected this new style characterized by his doing a major share of the talking in the classroom. Furthermore, since the students didn't have much opportunity to act, Mr. D's dominance was not as blatantly coercive as before. The aim of Mr. D's new relationship with the students was to nurture them with information as a means of making the teacher-student relationship a mutually satisfying one. The result was superficial smoothness in and contentment with the teaching-learning interaction. There was no longer apparent interpersonal struggling between a powerful teacher and dependent but resistant students. Mr. D's satisfaction with this situation led him to believe that he understood the students better and that he was now able to facilitate a productive teaching-learning interaction. In fact, the state of the student-teacher relationships was closer to the superficial harmony and understanding which the domineering father feels toward his rebellious children after he has crushed their oedipal strivings. What was actually the suppression by the students of their still intense needs, wishes and fears -- like the subdued latency child who found the struggle with the domineering father too threatening -- was interpreted by Mr. D as his students' readiness to be properly instructed by him. Consequently, he ignored their needs, fears and intellectual difficulties and treated the students as objects which were useful in running the course.

The students' acquiescence to Mr. D's increasing activity and control was interpreted by him as their contentment and appreciation for a more productive teaching-learning interaction. The behavior characterized by I- Proactive reflected Mr. D's belief that he was making the students tougher and more independent; a belief which hid the fact that he had provided them with the opportunities to realize their strengths and had subsequently crushed them, because he couldn't endure the expressions of personal desires, expectations and fears. Mr. D felt that his attempts to facilitate students' independence through open interchanges and shared responsibility had left the students anxious and independent. However, his new style of one-way information giving did not really improve matters and, in fact, made it extremely difficult for teacher and students to understand and effectively respond to each other. An example of the lack of clear and productive communication between teacher and students occurred during a discussion of Harry S. Sullivan's personality theory.

Mr. D: And this is a very hard thing to get out of sometimes. If you think about your perceptions of other people you will realize this. You tend to idealize people: 'They're wonderful; they're perfect.' And all of a sudden they do something wrong: They are all bad. You know: 'Why did I ever waste my time with this person?' And, ah, it's very hard to get back to a kind of resolution; to get away from this really immature childlike view of the world and get back to a view that says people are good and bad.

Floyd: Well, if this is true, then who's to say what's childlike and what's not?

Mr. D: Well, if you define childlike as what is characteristic of children I think that is a pretty good definition.

Floyd: Well, I mean if what he is trying to say is that these so-called childlike perceptabilities but in different form all throughout adult life...

Mr. D: Yeah, but they decrease. The child is unable to make perceptions of any kind other than these very bifurcated perceptions.

Floyd: Yeah, but he is still saying that the adult, to a lesser extent, is still able to make....

Mr. D: That is right.

Floyd: (Trailing off) Any more sort of distinction. And it seems to me to be just a question of degree. That, to me, for all intense purposes is the same thing.

Mr. D: That is right. What is the point you're trying to make? I guess I...

Floyd: That you can't all of a sudden start calling, ah, so-called adult behavior childlike when, in fact, it never really was supposed to have changed or never had...

Mr. D: Let's say this is a hypothetical graph and maybe this will make the point...

This student's intellectual disagreement with what is called "childlike" in adult behavior may very well have reflected a deeper emotional concern of the students' about their status in the classroom. While the image of the comforting father-teacher can appear initially gratifying it may also produce deep resentment in the students and depression in the conscientious teacher. While the teacher is apparently hard at work providing knowledge, the students may feel resentful because he frustrates their desire for comradeship and colleagueship. Furthermore, the teacher seems interested in maintaining his own psychic comfort at the expense of the students' intellectual and emotional growth. They may feel that the teacher is ignoring their constructive needs while stimulating non-constructive and infantile needs and entrapping the students in them. The teacher in turn may feel guilty if he senses that his apparent tolerance and understanding is a hoax, because he sees himself drawn away from genuine reciprocal involvement with the students.

If these issues were present in the teacher-student relationship, they were overshadowed by the relative calm in the early part of Phase Five. While Mr. D appeared more impersonal to the students he was also much less threatening. As he grew apparently more confident and more comfortable, the students' feelings about him became more positive and their behavior became more dependent. The students' rising scores on VII- Lo Exhibition captured the soothing mood of relying on Mr. D to run the whole show. The growth of these scores reflected the gradual rigidification of the class' interpersonal structure around teacher-dominance and student-dependence. The atmosphere of the teaching-learning interaction curtained at least overt satisfaction and tranquility. At no other time was Mr. D as free of student pressures and demands as he was during this portion of Phase Five. The students had come to feel that no matter how Mr. D appeared at any particular time he was eternally in charge. Consequently, it was futile to do anything but what he wished. The best, although atypical, example of the type of interaction characterized by VII- Low Exhibition occured during Mr. D's experiment (described above) where the students were subjects. Their behavior was rigidly controlled by Mr. D and the students went along with this.

The students manifested increased affection for and dependence on Mr. D in response to his benevolent authoritativeness. They had learned to rely on Mr. D to provide the energy for running the class and in the process had accepted his resources as surrogates for their own. This left the students with the teaching-learning interaction. Consequently, when Mr. D's moods became ominous -- although these events occured much less frequently and intensely now -- the students had neither the strength nor the confidence to withstand these moods and to continue contributing to the teaching-learning interaction. When Mr. D became threatening and critical all the students could do was retreat into passivity and anonymity in the hope of weathering the storm. The students' high scores on V- Low Challenge reflected their wary acceptance of these uncomfortable periods and their vague feeling of helplessness to do anything about it. During those periods in Phase Five when the students had high scores on Low Challenge, the topic material being discussed often stimulated and reinforced the prevalent feelings of anxiety and depression. Consequently, the content of the task activity often strengthened the students' belief that they were smart not to attempt any confrontation with Mr. D. During this time the class was studying Freudian psychosexual theory, particularly the Oedipus complex along with anthropological evidence from primitive societies which supported Freud's theories. This subject matter concerning aggressive rivalry with authority figures and the subjugating power of authority stimulated fearful fantasies about the possible consequences if the students ever expressed their negative feelings. The manner in which the content of the task activities influenced the students' feelings about the teacher-student relationships undoubtedly is not always as direct; however, the possibility for such a process probably is always present. Nevertheless, during periods of Low Challenge the students felt their expectations and needs were not now or ever going to be met. Furthermore, they felt it was safer to avoid making things worse than they were by challenging Mr. D. This attitude was exemplified by Floyd, previously one of the most assertive students, during the discussion of one of Margaret Mead's accounts of life in a primitive society. Floyd, a Negro, was annoyed by what he saw as Mead's uncomplimentary account of life in that society.

Mr. D: So it would seem that the Oedipus complex is rather well illustrated by the 'Mundugumor' which is actually one of the reasons I had you read about this particular society. Have you any questions on Mundugumor life that puzzle you?

Floyd: There seems to be some sort of contradiction. I can't put my finger on it right now. In reading about these people certain sorts of attributes that would be stated about family life, then later on she (Mead) would come in with these other sidelights -- like food-gathering. It actually would show cooperation between mother and father, but before you got the impression, you know, that they hated each other so much that they wouldn't under any circumstances come within ten feet of each other. It would seem that there were several examples of this...

Mr. D: That obviously isn't quite true. But I think there is...

Floyd: Well, this is really, indeed, an example I've given because I can't think of it right off. But there seem to be at least two incidents in which she describes certain traits of these people and all of a sudden she would be describing certain sorts of, ah, acts, you know, fights...

Mr. D: Are you trying to say then that there is, perhaps, less aggression expended...

Floyd: No! I'm not saying that. It just seems that some of these things that she might be saying about them could be, ah, a little shakier than they might seem, mostly because there seems to be some sort of contradiction.

Mr. D: I guess I don't; I'm sorry I don't see...

Floyd: I shouldn't have brought it up; an objection without a specific reference at hand (trailing off). But I suppose I could read it again and tell you exactly what I meant (he never did).

The interplay of interpersonal forces between students even at one point in time is too complex to be captured by any one description. Our examination of the last teacher factor will illustrate in comparison to the mood of the previous student factor descriptions, how diverse are the concerns and issues in the ongoing teaching-learning interaction. Even in their most pessimistic and lethargic mood the students were motivated and intelligent enough to gain entrance into a prestigious university. Furthermore, Mr. D was a very talented individual. The teaching-learning interaction that they had reciprocally established had resulted in some productive activity. Mr. D's occasional high scores on VI+ Display reflected those times when he reacted to the fact that students had validated his status as a teacher by producing something as a result of their learning experience. Sometimes this validation occurred in subtle ways, as when Mr. D and the students realized that a discussion had been an exciting and fruitful experience. At other times student performance on examinations, assignments or exercises attested to Mr. D's effectiveness as a conveyer of skills and knowledge. In any case Mr. D was able to feel a new surge of confidence that a successful educational experience might prove possible. Unlike earlier periods when VI+ Display reflected Mr. D's desire to escape the responsibility of running the class, his behavior now reflected confidence born from seeing tangible proof that his students had learned things from him. In addition, his control over the interpersonal structure of the class was sufficiently pervasive to allow himself a little relaxation of authority when he was in a good mood.

However proud Mr. D was of his students' accomplishments, he could never completely shake off the spector of interpersonal tension in the classroom. Consequently, even during periods of VI+ Display when he lauded the successes of the teaching-learning interactions, he needed to find a place for the students' expressions of anxiety and anger. Mr. D tended to accuse the students of being motivated by fear of him as much as by more positive needs. Furthermore, he saw their fears as an inherent part of their achievement motive and, consequently, was able to dissociate himself from any responsibility over the development of those fears and anxieties. An example of this behavior occurred during a discussion of why the students had done so much better on a concept formation experiment than had the subjects who had been in the original experiment which was written up in the literature.

Mr. D: Now in this situation, at least the way I think, there was a very high fear of failure induced in the classroom. (Warily) Do you people agree that this was probably true?

Students: (Silence)

Mr. D: I think that it was very highly negatively valued to get it wrong; that is, people were very concerned. Just looking around the classroom people seem very concerned about not failing, not getting it right... now I think really that this is a function of fear of failure in a problem situation.

Lisa: Why do you think in this class there would be a high fear of failure?

Mr. D: I don't know. What do you think?

Lisa: I don't know.

Mr. D: Anybody have any ideas?

Students: (Silence)

Mr. D: It's just my intuitive perception that as I passed out this paper (experimental instructions) to people and watched them suddenly go pale when I handed it out.

Students: (Chuckle)

Mr. D: I thought I detected some fear of failure. In fact, I had to tell people it wasn't a test and I'm not sure everyone believed me.

The student factors previously examined in Phase Five described how and why students kept their feelings and thoughts well hidden. Their high scores on II- Contention reflected how their dissatisfactions were indirectly expressed through task activity. In the early session (Phase One) task quarreling was only one of several arenas of teacher-student confrontations, the goals of these confrontations being to forge mutually satisfying task and interpersonal relationships. In Phase Five, however, as a result of Mr. D's dissociation of persons from their ideas, all forms of interpersonal communication and confrontation were condensed into relatively impersonal task activity. Consequently, task quarreling became the sole arena for struggling with all interpersonal problems. The students' high scores on II- Contention reflected the manner in which all of their yearnings, grievances and demands colored their task activities. The students' sense of the unproductiveness of fusing rather than integrating task and interpersonal problems was indicated by the strident manner in which they engaged in that behavior. Not all the students engaged in the resistant and counterdependent behavior characterized by II- Contention. Most of the female students and the weaker male students either acquiesced to or didn't overtly resist their powerful teacher. The stronger male students were the contentious ones. They included two types: the "independents" who tried to clarify certain task and interpersonal positions and whose demands were not resisted but not really accepted by Mr. D; and the "rebels" who in battling Mr. D were ultimately subdued into dependent pleas for liberation from the confines of his power and authority.

The issues involved in contentious behavior were those that had always plagued this class and which were highlighted by the sharp contrasts between Mr. D's display of power, authority and knowledge and the students' expressions of weakness, dependence and naivety. In addition, Mr. D's insinuations (characterized by VI+ Display) about the students' motives underlying periods of successful productivity accentuated the students' nagging feeling that they had not progressed very far in maturing as students or, on a deeper level, as people. The form of contentious behavior as well as some important issues -- like student dependence -- symbolized in task quarreling were illustrated during a discussion of Riesman's "other-directiveness." Mr. D pushed the example of the students at this university (including by implication the students in his class) as being "other-directed" and, consequently, conformity ridden persons.

Mr. D: What do you think of this classification of the university...as "other-directed?"
Students: (Silence)
Mr. D: How does it fit your own experiences? Do you think this is true?
(A couple minutes later, after a few students had responded)
Morton: I think this is a good argument, but I can't help but feel that ther are a lot of people that are in between and they're going their own separate ways without conforming to either of the two big traits, characteristics.
Mr. D: So what are you saying about...
Morton: Well, I think there is a general argument for 'other-directedness,' but I believe you could find more representative universities. I think this one has

more that are in between and not 'other-directed.'

Mr. D: Well, I don't know that 'other-directedness' necessarily means conforming to one particular group.

Floyd: I'd like to know how you can make any sort of generalization about as many people as are here? Because there are not really overt forms of behavior other than say for 'other-directedness' say for fraternities or what not...

Mr. D: You were perfectly willing to make a generalization about this 700 million people in contemporary India. Can't I make a generalization about the 30,000 people here? It's a lot smaller population.

Students: (Chuckle)

Floyd: Well, I think it is probably easier to make that generalization about India. The thing is that here...

Mr. D: Well, I think that this is probably true because you don't know quite as much about India as you do about the University...

Floyd: I suppose so. It's just the fact that people wouldn't, say, go under the classification of 'tradition-directed' or 'other-directed;' how could you ever know that such a body even existed? Because there is really nothing, you know, unless they are going to go out and have protest meetings to show other people that they are in fact like the rest of them. There's really nothing...

Mr. D: That in itself is an 'other-directed' thing to do.

As we mentioned above only the most assertive male students engaged in contentious behavior and, then, only for a brief period of time. Most of the students were passive in the face of Mr. D's dominance over the "discussion." They were satisfied to be caught up in his aura of wisdom and authority. The students' high scores on III- Low Concealment reflected an upturn in their optimism about making peace and working with Mr. D. Their scores also reflected the shift from their flounderings at the beginning of Phase Five -- characterized by IV+ Discouragement -- to coping with the rigid task and interpersonal structures which Mr. D had fostered. The students attempted to conform to Mr. D's implicit model of the interested and compliant student, in order to please Mr. D and to avoid his irritation and impatience. The students' attempts to emerge from anonymity and to involve themselves in some sort of work activity were anxious and faltering but they were positive attempts. An example of this rustling of student task engagement occurred during the discussion of Reisman's theories. Mr. D wanted the students to guess from the reading of his work what field Reisman had been trained in.

Mr. D: No, I mean does that make him, you know, a butcher, baker, candlestick maker, Indian chief? I mean, what is his professional role? Yeah, Sue?

Sue: (In a soft faltering voice) Sociologist?

Mr. D: Why?

Sue: Well, because I read him in sociology. (Anxious laugh)

Mr. D: An oblique reference of sorts, yes. Well, yeah, I suppose if you were going to catalogue him he would be, you might say he was a sociologist. Well, yes, Margaret?

Margaret: I don't think I agree with that (anxious laugh). He looks at society in terms of, in a psychoanalytic sense. He doesn't look at it in terms of institutions and heritages and all that.
Mr. D: That's true, that's true. He has a very complicated perspective, I think.
Margaret: Yeah, but...
Mr. D: Morton?

The fact that the students were re-engaging themselves in the teaching-learning interaction did not mean that they were developing and testing out their own skills. As a result, in fact, of Mr. D's increasing role comfort and allocation of a major share of the burden of task activity to himself, the students found that they were better off devoting their energies to showing eager acceptance of what Mr. D had to offer instead of trying to reciprocate or emulate his activities. The students' agreeable docility led to increasing good feelings between them and Mr. D; things were running smoother. By picturing Mr. D as a figure of practically omniscient authority and wisdom the students were able to avoid conflicting feelings about the kinds of relationships they wanted with him. Instead, they simply granted him their loyalty and trust with the fantasy that his skills and efforts, not in combination with their own, would be enough to provide the students with a productive learning experience. The students' high scores on VI+ Support reflected the relinquishing of their share of the reciprocal teaching-learning interaction (and unwittingly fostered by Mr. D), in favor a one-sided presentation of information and display of skills by Mr. D.

The student factors that we have described in this phase have, among other things, characterized the students' growing admiration of and loyalty and respect for Mr. D as a teacher. As those feelings came to play a greater share in setting the mood of the class, together with the increasingly comfortable atmosphere, the students' feelings about Mr. D as a person took on a very positive tone. The students impulsively reacted to what they imagined would be a warm, friendly and beneficient man even though he was a dominant and powerful teacher. The students' high scores on IV- Low Discouragement reflected their movement toward Mr. D in a sort of child-like eagerness and affection. The students, however, were not able to explicitly verbalize their desires for a much closer relationship because Mr. D was still, in fact, too impersonal and potentially threatening (perhaps, also, many of them would have been repulsed by the conscious idea that they felt so close to and dependent on him). Nevertheless, the interpersonal situation existent when the students had high scores on Low Discouragement remind us of the children who are happy just to be near the stern but revered father. Their docile contentment was nurtured by the fantasy that Mr. D would eventually satisfy all their frustrated expectations and needs; Mr. D knows all and cares for all, and it is only a matter of time, the students felt, before he would show his care for them.

The effect of the student fantasy of Mr. D as a stern, all-powerful but benevolent father was suggested, in one manner, by the greater frequency in which female students made playful, teasing and seductive overtures toward him. In one session in which the class discussed their performance on Mr. D's experiment, Lisa and Mr. D engaged in a playful dialogue.

The other students watched happily as if they were observing a favored sib playing with the father, and they as siblings knew the father's amusement with one sib would mean safety and reward for them all.

Lisa: Well, I don't know. Obviously I did everything wrong. But still I wrote down every single attribute for every single one on the whole series! I didn't (laugh).
Students: (Laugh)
Mr. D: I noticed that.
Students: (Laugh)
Lisa: I mean (chuckle).
Mr. D: (With amusement) But you never came up with the concept.
Lisa: (With amusement) Twice I did, or once. I did come up but I didn't even realize. Like were you supposed to eliminate, I mean I didn't know you were supposed to.
Mr. D: Well, that was the task.

Regardless of how pleasant these interactions appeared they still were expressions of a plea that had been manifested many times before: We know we are weak, ignorant and needy; so please help us, comfort us, protect us, and teach us. What now crucially differentiated student-teacher relationships from all that came before was that Mr. D had established a set of roles and interpersonal channels which effectively closed off all expressions of student thoughts and feelings except those which were not threatening to him.

Study of Individual Students

There was an interesting convergence on the VI+ Support factor pole of two students who had previously illustrated different factors, respectively. Lisa was first encountered in our examination of II- Contention in Phase One. She had engaged in a sort of respectful yet teasing relationship with Mr. D,whom she saw as a frightening yet highly attractive male authority. While she was quite confident and secure in her position in the class, she cloaked her strongest wishes and fears in task-oriented activity, and she said that students should always be "a little afraid of" their teacher. Lisa believed that the teacher-student relationship should always be "strictly dealing with the classroom;" however, this did not stop her from seeing Mr. D as a very sexually attractive male. We first encountered Robert in our examination of III+ concealment. He came into the classroom preoccupied with inner conflicts: "I know that I'm too dependent. But it doesn't bother me." He believed that Mr. D "is the leader" and tried to get close to him. When Robert was rebuffed he felt that Mr. D was "too stand-offish" but attempted to deny his own distress.

Lisa was able to handle the tension that she felt in the classroom by imagining it as a sort of battle of the sexes, and she gained some satisfaction from this. But Robert, like other male students, could not so easily accommodate his fear of Mr. D's authority. The common element in both Lisa's and Robert's relations to Mr. D was the feeling of weakness in comparison to him. They felt, with varying degress of awareness, that they couldn't cope with the difficulties involved in the teaching-learning interaction without the help and protective support of someone more powerful and wise than themselves. Although it may have conflicted with their more conscious aspirations and self images, at some level of awareness they needed to experience the comfort of and independence on an established authority. It is quite likely that every student feels this to some degree. The interaction of their own methods of handling these needs and the interpersonal situations they face in the classroom probably determines how much autonomy students are willing to fight for and to keep. Lisa and Robert were not the most overly dependent students in the class. However, the combination of their own past experiences with authority figures and the interpersonal structure of this class led them to place their trust in Mr. D, not as a facilitator of their autonomy but as an object on which to externalize the experiencing of their own inner sources.

Margaret had higher scores on IV- Lo Discouragement than any of the other students during Phase Five. She was a nice-looking girl with an air of apparent sophistication. She, like Morton, was older than the other students and further along in her student career. Margaret expressed a preference for a good deal of autonomy in the classroom, along with enough guidance to feel comfortable. She imagined the teacher's role as a discussion leader functioning to keep the class in a "fairly directed line." Margaret saw Mr. D as a good teacher and very bright. However, she also saw other things which made Mr. D attractive to her: "He is good looking," "a blond-haired boy with a smile," "he looks very young when he smiles." Margaret felt that if she could get to know him better she would find Mr. D "more outgoing" and in more "gay, rompy moods." Her sexual attraction to Mr. D was evident, but Margaret did not manifest the childlike infatuation and dependence on Mr. D that characterized most of the other students' behavior when scored on Lo Discouragement. It was almost as if Margaret fantasied herself in a protective and supportive position in relation to Mr. D. She manifested signs of rivalry with other females (and dependent males) for Mr. D's attention and she was irritated by what she saw as Mr. D's smugness about signs of student attraction to him. Margaret's feelings about Mr. D bordered on possessiveness. She believed she could generally tell what mood he was in and she could become irritated at signs by Mr. D of weakness or irrationality. Margaret felt jealous of both male and female students who tried to win Mr. D's favor, which was a situation more conducive to oedipal influences than to realistic sexual and affectionate feelings. However, Margaret also had a fantasy that she and two male students (Floyd and Morton), who displayed more assertiveness and intelligence than the other students, were allied with Mr. D in a sort of oligarchy based on wisdom. In sum, Margaret manifested influences both of a female student who is emotionally and intellectually attracted to her teacher and of the doting daughter who possessively cares for her revered father and who is somewhat frightened of him. Margaret had imagined a teacher-student relationship that was intellectually oriented and based on a fairly egalitarian dialogue. However, the influences on her ways of relating to male authority figures from her past experience in combination with the interpersonal situation in this classroom drew Margaret into a relation with Mr. D based on conflicting feelings: On the one hand, she wished to please him in order to gain a place of importance in his feelings; on the other hand, she feared that too much assertiveness on her part would displease Mr. D and lead to rejection by him.

Summary

In Phase Five Mr. D swung from the desire to avoid all engagement in and responsibility for the teaching-learning interaction, to a position where he was totally engaged in maintaining rigid control over the direction of all task and interpersonal roles in the class. In addition, he took almost complete responsibility for the maintenance of the teaching-learning interaction. At first, the students felt crushed by Mr. D's grip on the class; they were distressed and resentful but passively hid their feelings. Mr. D's original motive for asserting complete control over the teaching-learning interaction had been to quench any uncomfortable personal interactions and involvements with the students. After a time, however, his impersonality and dominance took on more positive tones. Mr. D had decided that the students were made only anxious and dependent by giving them too much freedom of expression and by providing the opportunity for personal involvement with their teacher. He decided that the best atmosphere for a productive teaching-learning interaction would be one in which he took an impersonal stance vis a vis the students and in which they relied on his skills and knowledge in a primarily one-way information giving interaction. The students reacted to Mr. D's more positive attitudes towards them and to his more comfortable position in the teaching-learning interaction by giving Mr. D their loyalty, support, and trust. The students were no less passive than earlier in the phase, but now they overtly felt better about it and accepted it as the best possible relationship with Mr. D.

While there was a superficial atmosphere of interpersonal tranquility and task activity, by no means had teacher and students established a teaching-learning relation that fostered a genuine work relationship. Mr. D was able to lecture and hold discussions without feeling any attraction or hostility towards his students. However, he was still left with the desire to withdraw from any involvement with the class. No longer was there the need to escape interpersonal conflicts; instead, there was apparently a feeling of hollowness about the teaching-learning interaction. Task activity did not foster task engagement because it lacked the stimulating richness of interpersonal involvement. Mr. D's preoccupation with purely intellectual activity and productions had cut off both himself and the students from the richness -- and the turbulence -- of emotion and impulse. The driving force for creative activity -- even when it is experienced merely as a feeling of interest -- was quenched. Teacher and students were emotionally and in many ways intellectually disengaging from the teaching-learning interaction, like a crowd filing out of a rained-out ballgame.

Termination Sessions

Phase Five marked the growth of an interpersonal structure characterized by teacher activity-dominance and student passivity-dependence; and of a set of task roles characterized by the interchange of ideas which were dissociated from the individuals who produced them. In the last two sessions, however, there was an abrupt shift in the concerns, conflicts, and trends that had been salient. In the last two sessions a sudden rise in the students' scores on the V+ Challenge reflected the re-emergence of angry and rebellious feelings. These feelings, however, were no longer the confident and enthusiastic expressions of students who were displaying their expectations, needs and fears in a new class situation. Instead, rebellious veterans were resentfully complaining about what they saw as the insidious pressures that Mr. D had exposed them to in the past. The students were airing their feelings of anger and confusion which they had harbored throughout the term over Mr. D's threat-invoking vascillation between hostile moralizing and supportive friendliness. In the next to the last session a burst of high student scores on I- Anxious Dependence indicated the fears and anxieties stimulated in the students by their sudden assertive behavior. It is likely that the students subjected themselves to fantasies of powerful retribution after their long period of dependence on and reverence of Mr. D. Of course, on a more overt level of awareness it is easy to see how the students would experience some trepidation over speaking out after having grown accustomed to maintaining a respectful silence.

In the last session Mr. D manifested a high score on III+ Colleague. Mr. D's score may have reflected a renewed attempt at collaboration with the students in reaction to their renewed demands. The students' behavior could be seen as having reactivated Mr. D's latent wish to establish friendship with them and, at this late date, to establish the mutual autonomy and reciprocal dialogue which he had originally envisaged. In the last session Mr. D also manifested a high score on II- Role Dissatisfaction. There was probably a subtle causal interplay between the two sets of feelings and behaviors reflected by these two factors. On the one hand, the abrupt appearance so near the end of the class of long dormant student complaints and demands probably stirred up feelings of dissatisfaction with what Mr. D thought had been the establishment of a successful set of task roles and interpersonal relationships. On the other hand, Mr. D's renewed attempts at promoting colleagueship in order to appease the students and to buoy his own satisfaction with the outcome of the teaching-learning interaction probably stirred up old discomforts with this form of relationship. The result of these mixed feelings and expectations was that Mr. D made overtures to his students for a renewed colleagueship, while at the same time attacking them and expressing his own distress.

The renewed yearnings and fear of both teacher and students can be examined not only in terms of the interplay of issues in the last two sessions but also from a perspective which encompasses the entire development of the teaching-learning interaction and teacher-student relationships. Whenever a group of people invest a good deal of time and energy in a prolonged encounter, the impending termination of the encounter arouses depressively toned conflicts over having to separate. There are desires by all participants in the encounter both to rectify any ill feelings and antagonisms which have developed and to leave the encounter having gotten out of it as much good as possible. The participants also have to deal with the uncomfortable and usually inevitable feeling of having failed to achieve all of the goals of the encounter. There are many ways in which a group deals with termination-separation issues (See Slater, 1966; Mann, et al., 1967). A prerequisite, however, for dealing with these issues in any effective manner is that previous interpersonal difficulties that arose during the group's life have been tackled and, to some degree, satisfactorily worked through, so that when termination issues do arise the group can invest their full energies in attempting to resolve them. When in a group's life, task impeding emotions, impulses and expectations are aroused and not openly resolved they may be covered over but they do not disappear. Instead, they will remain dormant till termination issues stir them up. These old and unresolved interpersonal conflicts will surface during the end phases of a group and will overshadow the termination-separation issues that should be dealt with. The results will be a reciprocal accentuation of unresolved expectations, needs and fears. Members of the group will be in despair over the feeling that they have failed to attain their goals because their past activity has really not been productive; and they will be in despair over the feeling that there is insufficient time left to tie up all of the loose ends of their not very satisfying relationships.

In the last two sessions of the class the re-emergence of unresolved interpersonal problems highlighted the tenacity of these issues even in the most task-oriented teaching-learning interaction. During the development of their relationships, Mr. D and the students had dissociated their interpersonal problems from their task activities and goals when their energies could have been devoted to integrating the personal-emotional components of the teaching-learning interaction with the task-cognitive components. To put it another way because teacher and students had not devoted sufficient energies to finding ways of fully and productively engaging themselves in the teaching-learning interaction they were not able to satisfactorily disengage themselves from it. Satisfactory disengagement from the teaching-learning interaction is crucial, because in this process teacher and students have the opportunity to make a final integration and synthesis of their learning experiences in the class. Without this final integrative activity it is hard to imagine how teacher and students can make their experiences together a working part of the set of needs, emotions, ideals, values and goals that give structure and meaning to a learning career -- whether it be teacher or student career -- and that motivates them to follow it. Both Mr. D's and the students' learning experiences were intermingled with the internal representatives of unresolved interpersonal conflicts. Their teaching-learning interaction and their relationships were characterized by rigid separation and encapsulations of areas of their experience which they were unwilling and consequently unable to integrate. Consequently, just as during the term their engagement in task activities was always accompanied by the nagging feeling that they had sacrificed legitimate personal needs and expectations in favor of a superficial harmonious interaction, at the end of the term their disengagement from the teaching-learning interaction was accompanied by the depressing feeling that important needs and expectations had not and would never be met. Furthermore, the frustration of these needs and expectations left a residue of anger and resentment which would make it extremely difficult for Mr. D and the students to ever find for their mutual experiences a productive and satisfying place in their learning careers.

V - 4: Variations Among Students

When we looked at our accumulation of data on the students in these classes, it seemed to us that to treat these students as an undifferentiated mass would not adequately reflect the myriad differences in their backgrounds, their personalities, and their emotions and behavior in class. When we looked at broad and easily distinguishable differences such as sex and participation, we found that they were indeed relevant, and provided highly useful perspectives. But we found that even within these differentiated groups there were important and complex variations among students. We felt a need for an additional conceptualization of students as similar to or different from each other based on their experience and behavior in the class as recorded in the act by act scoring system. We had some intuitive ideas about some differentiations that might be made..we know, for example, that some students were particularly rebellious and some more anxious and dependent. We hoped, however, to move beyond such impressionistic groupings and find a way to group the students while still maintaining conceptual usefulness within our intuitive framework.

We were able to make use of a statistical tool known as cluster analysis. This procedure gave us a number of groups of students who in some sense, according to their factor scores, belong together. This methodology has its limitations. The set of clusters which we obtained is not the only set which could have been formed from this group of students, nor would one probably find equal proportions of these different kinds of students in a different type of student population. It also becomes clear in studying the clusters that they cannot be considered as stable categorizations of personality. The students who are in a given cluster in this given class are often likely to have been in a different one in the past, to be in a different one in the future, or even to be very different in a different class the same term. depending on the teacher, the material, their stage of development, particular concerns at the time in question, and innumerable other factors.

But we think and hope it has turned out that these particular clusters can be of some help to many of us who teach. It is difficult, with a class of students before us whom especially at first we do not know as individuals, to realize that there are many different concerns being expressed, that because one student is being extremely hostile does not mean that the whole class is angry, or because some students are dissatisfied with some teaching innovation, others may not be very pleased with it. It is certainly true that students in certain clusters may adopt the position of spokesman, and may represent unexpressed but still important feelings in other students. But it is also true that the class is not monolithic, that feelings of some students may be diametrically opposed to those of others. We hope that the clusters may provide a conceptual scheme which will prove useful in thinking about these differences, in avoiding too much discouragement when it seems that there is never a time when everyone is ecstatically happy with what is going on, and in trying one's best as a teacher to balance and integrate one's own personality and wishes with the variegated reactions of one's students in such a way as to have the class be as much fun and as productive as possible.

The data which provides the basis for our description of the clusters, as well as for much of the analysis of sex differences and differences in participation is a mixture of pencil and paper tests, interviews with the students, tape recordings and transcripts of sessions, and a follow-up questionnaire. The various instruments are described in detail in footnote 2 at the end of this chapter.

Finally, we cannot say that in describing the characteristics of a cluster of people we are literally describing what all, or indeed any, of the students in that cluster are like as individuals. Naturally each person is unique; some would be considered more representative of a given cluster than others, and some might almost be considered borderline between two different clusters, but probably none is a perfect example of everything we discuss as being an overall trait of that cluster. In studying the clusters we looked for trends in the data, for characteristics which were common to many members of one cluster and tended to distinguish them from members of the other clusters. Having given this qualification, we will now proceed to describe the clusters.

Cluster 1

Factors:	HI:	Enactment	.01[3]	LO:	Challenge	.01
		Consent	.01		Discouragement	.01
					Concealment	.01
Categories:	HI:	Identifying	.01	LO:	Moving Against	.01
		Independence	.01		Resisting	.01
					Guilt Inducing	.01
					Counterdependency	.01
					Depression	.05
					Denying of Depression	.05

Our first cluster fits perhaps better than any other the picture of the typical student in the traditional classroom. Its members, 7 females and 5 males, seem quite contented with their classes, their teachers and themselves. They are consistently task-oriented, only rarely experiencing any of the kinds of emotions which might interfere with their pursuit of that task. Most of all, they take part in no rebellion, and seem to feel no inclination to do so.

These students seem to fit rather well with O. Rank's conception of the "average man". They have chosen to deal with the pain and guilt caused by differentiating themselves from their parents, their society, and other authorities, by adapting themselves to the will of such authorities, and learning to follow their dictates without any inner conflict. In other words, they easily and naturally adapt to the position of conforming to the standards of an authority figure, without considering the possibility of questioning these standards.

When we look at the background of these cluster 1 people, we find some antecedents to their lack of rebellion. In a couple of cases these students describe their parents as strict, so that it seems rebellion would have been too dangerous. And in these cases, the lack of rebellion involves an acceptance of the standards of strictness, such that they plan to raise their children in a similar fashion. More usual, however, is the pattern of indulgent parents, who would be disappointed in their children if they didn't accept and/or live up to their standards. In this case guilt becomes the main factor inhibiting rebellion. Thus, SR says in her interview, "Mr. C would idealize a daughter and so does my father", and"My father has very high standards but they are realistic." JG says that her father doesn't like to see her grow up; and VS transfers this kind of situation to her teacher in saying that Mr. B would be an affectionate father who would make definite rules, and might be overprotective.

For almost everyone in this cluster, this combination of affection and high standards produces a strong reluctance to consider the possibility that authorities, or in this case their teacher, might be doubted or argued with. A typical statement of this attitude is by MB, who says that the students and the teacher are on the same team "because the class doesn't know enough to be able to argue with him." It seems likely that the class will not know enough in his eyes as long as the teacher is in a position of authority over them. Only one student in this cluster shows signs of conflict over her conforming behavior. BT states that she's "too cowardly to be rebellious", that "she conforms to society" and "keeps her own thoughts". For most of the others, any tendency toward rebellion is firmly suppressed, so it seems that the thought literally never enters their minds.

The lack of rebellion in these people does not seem to make them at all unhappy. Their parents were affectionate, and this seems to have helped to make them relatively happy people with a high level of self-esteem. When asked to list adjectives describing themselves, they almost always sound quite contented with themselves; one example is VS, who says she is "understanding, friendly, lively, neat and considerate."

As is usually the case, predisposition cannot account entirely for the experience of these people with their particular class. There are other factors which helped these people to have a pleasant experience as students in this case. One of these factors was their natural affinity for the social sciences. Most of them were majoring in fields outside the natural sciences, their verbal SAT's were higher than their math, and they generally stated that they found the material in psychology especially interesting. Another interesting factor is that a number of them were preparing to be elementary or high school teachers. This bears on their lack of rebellion, in that they probably identified with the role of the teacher, and didn't look forward to having troublesome students themselves. It also seems that psychology would be a personally relevant subject to those interested in teaching, and this would tend to help them enjoy the material in the course.

The compliance which is part of a general interpersonal style for these people brings with it a reliance on extrinsic motivation to stimulate their learning experiences as students. They work because their parents expect them to, because they are preparing for the future, because the teacher will grade them and, for some females who find the teacher especially attractive, because work will bring them praise and attention. They tend to do what they are supposed to do in the course, no more and no less, and they achieve at about the level one would expect given their ability. One gets the impression that were it not for these outside motivators they would be pleased not to have to do any work at all, even though they do find this work interesting while they are doing it. Thus in a discussion of different plans for weighting paper grades, RK points out that with one plan people could slough off on the last, most important paper; and SR states:"when I get praise (from parents) I know I really deserve it. Mr. C hands out praise a little too readily. With Mr. C's early praise, they may quit." In a discussion of whether people should be called on in the discussion, SA says that would be a good idea because sometimes she has to be forced to put her ideas together, and, later, that "it's like studying for a test, you don't do it unless you have to." And two cluster one people bring up the question of whether there will be class the next time in Mr. B's section, since there is to be a special university event. It would, we think, be extremely rare to find one of these students getting so engrossed in a fascinating problem in one course that he would let another course slip, or getting so caught up in a lecture or a discussion that he wouldn't notice as soon as the hour was over. These students, while good students, could not be called intellectuals. The major portion of their excitement about life is devoted to areas outside the academic sphere. In class they fulfill the requirements steadily whether or not they are especially interested in them and they have their real fun elsewhere.

This cluster is predominantly female, and this makes a lot of sense in terms of the traditional role expectations which define females as passive and non-rebellious. The females in this cluster do tend, in fact, to take rather traditional views of themselves. They are not likely to be devoted to careers, and if they do mention careers, they are in a traditionally feminine sphere, such as teaching. In the classes, they tend to play an important part in discussions of feminine issues such as child rearing and maternal deprivation, and to make feminine comments such as MR's exclamation about Skinner's baby box, "Did he do that with a child?" The use of a strategy which is usually considered female does not seem to distress the males in this cluster or make them feel inadequate. They seem to view the classroom in a traditional way, and to see their proper role as a rather passive one. They do not participate very much on the whole, and those males who do participate more find it important to see the teacher in colleagual terms than do the hi participating females. For most of the males, this is just a sector of their life and they don't feel any threat to their maleness elsewhere in taking a traditionally passive student role in this class.

Given the predispositions and characteristics which we have discussed, we would like now to discuss the kinds of classes in which the cluster 1 people seem to be most comfortable and then describe their actual behavior in class.

There do seem to be two kinds of classes which disturb these people to some degree, although they seem to be able to get along and continue with the task in almost any class situation, even if feeling somewhat uncomfortable. One of these is one which does not reward them even when they are doing their best. Their intellectual ability is only about average for the university they attend, and when, as in class D, a teacher comes along who goes too fast for them in presenting material and is scornful of many of the contributions they make in class, so that they are not receiving their customary extrinsic rewards, they will become somewhat distressed, and this is seen in some of the interviews from people in that class.

Another kind of class which may upset them is one in which the teacher has, in their opinion, relinquished too much control. In this case they may feel that the requirements of the course are not clear enough. Thus in the two classes where there was a good deal of discussion, the cluster 1 people, while they enjoyed the discussions, also tended to say that they wandered too much or were too trivial. They wanted the teacher to take more control and make sure all the material was covered. They tended to do most of their participation and most of their enactment at the times when the teachers were most in control. They were most comfortable when the teacher was proactive, when he talked a lot. They enjoy learning in a rather pssive manner the things the teacher has to tell them, and don't trust their fellow students to talk about important things. Their ideal teacher, as JM put it, "has all the answers". In conjunction with this feeling, they also wanted to maintain a traditional distance between the teacher and the students. Some, especially the females, may be attracted to the teacher, and this helps motivate them to work, but they are content to keep this at a distance and would be uneasy if it shifted. On the only measure we have of the TAS for these students, the final evaluation, the cluster 1 students on the average said that the teacher was too much of a person. They felt uncomfortable when he left a traditional stance and tried to become closer to the students as people in their own right. Thus GC states in his interview that he wouldn't be uncomfortable on a train with the teacher because he knows what he said wouldn't affect his grade. It doesn't even occur to most people to consider the effect on their grade, and JG says that she is afraid to get too close to the teacher, she's afraid of buttering him up. Thus concern with the role of the teacher as dispenser of extrinsic rewards prevents them from seeing him as a person with whom they could enjoy a relationship which might have its own intrinsic rewards.

This cluster does much of the routine work when the class is going smoothly. They ask and answer questions, volunteer information, and they lead discussions when that is a part of the classroom structure. After class, they may ask for dittos if they have missed any, or stay to "clear up a few points", as GC said. Mostly they do not get too involved with other than cognitive work in the class, they rarely express any strong emotion.

The main concern of this group seems to be understanding the material. They serve an important function in the class in that they usually do understand it rather well. Teachers sometimes check with them when they are afraid that they may have lost the class, and they are fairly certain to have been paying attention, and to be able to reassure the teacher that he was clear enough or else tell him where he wasn't. They do the reading and the other assignments, and understand them too, so that they can answer questions on them in class. They also seem to have a good sensitivity to the cognitive goals of the teacher, to understand the rationale behind his method of organization and presentation of the material. Thus, Class D, during a discussion of what classes should be like which is filled with a number of emotion-laden comments expressing anxiety and hostility, JP suggests as goals, "appreciation of the science" and "presentation of a climate of thinking on the subject." Both of these are accepted with great relief by the teacher, as they reflect rather well what his actual goals are, and seem to have aroused little disruptive affect in JP.

This emphasis on understanding goes hand in hand with a propensity to accept the statements of teachers and authors of readings without questioning their accuracy or usefulness, as long as they are easy to understand. The clearest example of this comes when Class B starts to discuss the lecture on sexual symbolism in Cinderella. This was a lecture which aroused a great deal of emotion in most of the class, and led to a spirited discussion which challenged the assumptions of psychoanalysis, and by implication, the teacher. The discussion started with Mr. B asking the class what they thought of the lecture. MR raised her hand and said, "I thought it was a good lecture, it was easy to understand."

In addition to their reluctance to question authorities, this cluster shows no desire to fight with their fellow class members, as do many of the males especially in other clusters. They gain their status in the teacher's eyes not by defeating other students, but by being loyal and understanding, and not causing trouble. This lack of need to fight is shown in their questionnaires where they say that they are not very distressed, and neither are the other students; unlike some other clusters, they feel no need to derogate the other students if they are to feel good themselves.

This group is not solely interested in understanding things. They also find the material interesting from a personal point of view. The females who are high participators (the group on the average is not very high on participation but a few members are quite high) are likely to bring up personal examples, and to have some desire to be analyzed by the teacher. This is partly connected to the fact that they are attracted to the teacher, and this passive-receptive but personalized model of learning is very pleasant for them. As we have mentioned, the subject is interesting feom the point of view of prospective teachers or mothers, or for one male, industrial managers. As well as the personal examples of psychological phenomena, this cluster may also discuss applications of theory to vocations or activities which interest them personally.

When one thinks of work as a creative integration of intellectual, cognitive and affective components of the situation at hand, the people in this cluster, while they do contribute to work in the classroom are lacking a complete realization of it in themselves. Since they never differentiate themselves from authorities, they are left to rely heavily on those authorities for their own ideals and ideas. They cannot, without pulling away on their own, develop creative reintegrations of themselves and others, of their own thoughts developed from their own experiences and the thoughts of teachers and writers and psychologists. They may apply things, but they are not good at innovating. They will not be the people who will come up with an idea that goes beyond the teacher's theory, or integrates it in a new way with someone else's theory. In fact, since they are not so much interested in the material for its own sake, but rather for the rewards which it can bring them, they do not even read things outside the course; they don't try to look at the field from any perspective than that chosen by the teacher. Their understanding of that perspective will be helpful in discussions, and certainly can take a part in work in the group, where there are other kinds of people to fill other roles. But in their own cognitive worlds, their suppression of negative affect prevents them from being very creative or original in thinking about the ideas with which the class deals.

We might say that it may be relevant to keep in mind while thinking about this cluster that most of them are freshmen, and it is possible that they are just beginning to experience the process of differentiation which Erikson calls the identity crisis and which seems to be a crucial part of the first couple of years at college for many students. In later classes they may be members of different clusters. But for now, while they are in this cluster, they are a part of that classroom for that teacher. We might suggest that there are a couple of ways of treating these students which probably are less useful in helping lead the class toward productive work than some others. One way is to discount or scorn their contributions because they may not be as impressive as occasional sparks of brilliance from other students. This would discount all the important work that they do, and means hoping for the impossible, to have brilliance all the time. Another is to mistake what they are doing for all that can be expected of work, and to be satisfied with their contributions and not try to encourage other students who may be more troublesome but perhaps also more potentially creative to also take part in the work of the class.

Cluster 2

Factors:	HI:	Consent	.01	LO:	Enactment	.01
					Exhibition	.01
					Concealment	.05
Categories:	HI:	Dependency	.01	LO:	Resisting	.05
		Anxiety Expression	.01		Independence	.05
		Depression	.05		Counterdependency	.01
		Level One	.05		Denial of Depression	.05
					Participation	.05

With 16 females and 12 males, this is a large cluster, and one which forms an important part of every teacher's experience with his students. Its members are somewhat angry on the inside, but mostly frightened on the outside, very dependent on the teacher for knowledge and support, and very anxious about being evaluated. Their anxiety keeps most of them from doing anything we might call work in the classroom; but for many of them, something about this class becomes an important part of an experience of growth and change and personal learning, of which the anger and fear were a painful but necessary part.

With cluster 1 we found in the parents a mixture of parental affection and high standards, a combination which is hard to rebel against but which leads to contentment in the students involved. For the people in cluster 2, the past was not so happy. There were high standards, strict rules, and probably liberal punishment, but as they describe it, the accompanying love was insufficient or absent. Some of them had parents who were absent a lot, for one a parent died when he was quite young, and for a good many more their parents just didn't seem to give them enough affection. Thus LC says, "My father doesn't relate to children well. He's always pushing us..We have more responsibility than great love." BP says that he only talked to the teacher on time outside of class but "he probably knows me better than my parents." And in class one day during a discussion of cognitive development in children, VR says, "In, like a child when a child is about 2, adults speak softly to a child and they kind of whisper because the baby's sleeping most of the time and, then all of a sudden they'll do something wrong and they're yelled at and this hits them at that time and the reaction is maybe they'll pick up something and throw it back."

There are a number of possible reactions to the lack of love which these people perceive in their parents, and for this cluster the norm seems to be that a number of these different reactions are mixed in each person.

On the one hand, these students feel helpless and dependent, they are easily hurt, and they try their very hardest, over and over again, to win love through accepting and carefully following the standards of authorities. BP identifies with the standards of his parents, says that they raised him well, and thinks that young adults are naive; MC in her interview worries that she ought to keep talking because the tape recorder is going. But this strategy of trying to please authorities by carefully following their standards was never very successful at winning love from these people's parents, and following it alone would not make them happy.

Another possible reaction for lack of love or attention is anger, and one can see quite a lot of anger in the interviews with these students. But with strict and demanding parents, anger is a dangerous thing, and for children of very religious parents, who make up a portion of the membership of this cluster, anger in themselves arouses great guilt. So the idea of actually expressing the anger they feel is a very threatening one for this group. Thus we see that not only do they not tend to engage in any rebellious behavior in class, but they get very anxious when other students express hostility, either towards the teacher or towards each other. Their anger is usually not unconscious, they are aware of it, but it is kept under tight control, at least at this stage in their lives, out of fear of the consequences which might follow its expression.

Neither bottled-up anger nor anxious dependence leads to a very happy state for these students, and most of them tend to be depressed and dissatisfied with themselves. When asked to name metaphors which would describe themselves, they are likely to use such expressions as "color me blue" or "the dull one"; and a not atypical set of self-descriptive adjectives is "lazy, shy, dreamer, hungry".

For a couple of people in this cluster, there is a special problem due to membership in an ethnic minority group. The special problems of rejection faced by such people and likely reactions to this problem are well-illustrated by one black member of class C. MN said in his interview..."I stopped coming to class...I didn't want to talk about race...Being put on the spot...I want them to know that I could hate. That they could be bumped off. They do."

There seem to be some differences between the male and female members of this cluster which are important. This cluster, like cluster 1, is predominantly female, and once again it fits rather well with cultural definitions of the female role. But in cluster one the females are satisfied with their role, whereas the females in this cluster give considerable evidence of dissatisfaction. While this is by no means true of all the femals in this cluster, several of them seem to feel a particular inadequacy in comparison with men, and a particular hostility toward men. VR is a person with particular reason to be angry with me. In her interview she tells that she has two brothers who were favored over her and allowed to do things she wasn't because she was a girl. She says her older brother, who she says resembles her teacher, sat back during two times when her life was in danger and didn't try to save her. Her father was strict and dogmatic with her, yelled at her, and still treats her like a child, but pressures her to get high grades, and tells her that if she flunks out, then that's it, she's through. LC, in referring to a discussion of maternal deprivation in Class B, says, "boys will always be bigotted anyway. I never worked with boys, and thought we were all equal..we're not."

Others of the females in this cluster are trying to live up to brothers or fathers who they feel have more intellectual competence than they, and are frustrated by that. Still others would like to pursue careers in addition to being mothers, but don't expect to be able to, and are somewhat angry about that.

These females do not express their anger any more than do the other members of this cluster. But some of them seem to feel to some extent that they are playing a role when they act dependent and submissive, and that manipulation of men is one function which that role serves for them. The interview with WN gives us one example of this attitude; when asked to imagine what Mr. C's wife would be like she said, "She doesn't feel dependent on him, but makes him think she is."

The males in Cluster One seem to have their main sources of self esteem outside the academic world, and weren't bothered by acting fairly passive and non-rebellious in the class. But this is not true of the males in this cluster. They are more caught up in feeling inadequate and incompetent, and wishing that they could be stronger and perhaps fight a rebellion successfully. They do seem to show a little more hostility toward the teacher than do the females in this cluster, and their rebellion seems ineffectual next to that of the more hostile males in some of the other clusters. Thus MO argued with Mr. C about the answer to an exam question and clearly loses the argument. A little later in the same class session he tries to argue about a question which was supposed to be a gift, and which only three people missed. When these people try to rebel, they are likely to pick issues which make their rebellion easy to put down.

One of the most pervasive issues in this group is the members' feelings of intellectual incompetence. This feeling has some basis in reality factors--their scores on the verbal SAT are significantly lower than those of the other clusters combined. Their feelings of inadequacy are further accentuated, however, by their generally low self-esteem and their particular need to please authorities combined with their doubts that they will be able to do so. Thus VR, whose father is pressuring her to get good grades, says "My father may overestimate my mentality. The other kids seem smarter than me." CG says she's afraid to say anything in class, that what the other students say seems deeper and she's afraid of being laughed at. LJ, when asked to title the class says "intellectuals--especially the four up front". BP wonders "if I really have the ability to think as deeply as EL and GC do": and PL says, "Some students seem way over my head" and later states that if he were on a train with his teacher, "I'd probably ask questions that would be over my head...he'd realize that and give superficial answers. We'd get off the subject of psychology."

This feeling of incompetence, together in many cases with persistent external pressures, especially from parents, combine to make this cluster tremendously concerned about grades. This concern is so pressing that it often overshadows all other aspects of the course. Thus PL says, "This is one class I really need a grade in...I just need the mark so badly...there's so much anxiety from him not telling how he's going to mark." SG says, "My parents expect good grades from me. I'm the family failure"; and LW is worried about her grades, saying that she doesn't think the teacher asks questions which fit with what's been said in class, and since she can't get the right answers on tests, she would advise a friend to switch out of that class.

This anxiety about grading tends to make these people somewhat uncomfortable with the discussion mode in class, for they are afraid they are not learning enough facts to do an adequate job on the tests. Thus, when asked what hints they would give to friends who were going to be in that class, PK says, "Take notes on everything he says" and BR says, "The tests are based on the readings, skip the general discussions except when the teacher talks, there's not much information otherwise," and when Mr. B suggests that they change their format to a discussion led mainly by students, PL suggests, "Could it be possible at the end of the discussion either to discuss with you as a coordinator or for you to wrap it up at the end? I want to be able to take notes..."

For these people especially, and also for other students, the issue of grades is so crucial that the final grade can cast a happy glow or a pall of bitterness over the memory of the course, and can have a great deal to do with whether a person takes any more courses in that area. Two years after her class was over, PK states that she "never took more psychology because I didn't do as well in it as I should have," and lowers her rating of the instructor. For other people, there is the opposite effect. For this group which is so unsure of itself and so afraid of negative evaluation, grades are a very powerful reinforcer, and are probably taken much more seriously as an indicator of intellectual stature in the field and of personal worth than most teachers would wish in giving them.

This discomfort seems to be part of a larger phenomenon which seems rather ironic. Some of these people are actually afraid to get involved with the material. They are afraid that if they get very interested then they will want to think about it and talk about it, and if they do that, they will not have the time to learn it in such a way that they can repeat it on tests. Thus MO-9 says the Mr. D is not a good teacher for her, but that he would be for others who could follow his thoughts better. She likes the depth with which he covers the material because it's interesting, but it's not good for her grade. MO-7 says "As it progressed I got more interested. I fell down on the exams though"; RO says that his difficulty with the material came because he was thinking about it too much; and PK says, "If he'd only lecture I'd get a lot more....I'm afraid we're not covering what we should be...the prime purpose we're here for is grades. I enjoy getting underneath these things but gradewise it isn't going to help me."

The performance of members of this cluster in class tends to mirror their dependency and anxiety but not very much of their anger. One of the frequent comments they make is that they do not understand something; they often ask the teacher to repeat what has been said or to clarify it. Sometimes they express feelings of inferiority, as when CT, in a discussion of whether people should be called on, says that lots of times she thinks what she has to say isn't as good as other people's and that's why she doesn't talk more.

They tend to act rather helpless and to emphasize the fact that they need the teacher. Thus when, in the first session, Mr. C asks if everybody knows about the reserve book procedure, it is WN, a member of cluster 2, who says she doesn't. He asks her if she has a friend in class, and she says no.

They show a great deal of anxiety about testing and other evaluative procedures, and not a few of their comments are about those issues--they ask for details about grading, how much things will count, which things they will have to know, etc. They also show their anxiety about that issue in discussions of other issues, as when LW, in a discussion of teaching machines, asks "Are you tested on this material later?...I don't see how you could do an essay, and combine all the different things. They generally take careful notes, and this may be disconcerting to a teacher who is trying to be democratic and lead fascinating dicussions. When Mr. A asks the class why they wrote down what he just said, it is LW who says she did because she had never heard that word used before.

The people in this group tend to express their thoughts and even their questions in a very tentative manner and often need encouragement. They are easily silenced by punitiveness on the part of the teacher. Mr. C and Mr. D are good examples of teachers who handle these students very differently. Mr. C has a very warm manner; he tends to accept all the students comments with enthusiasm and de-emphasize grades. He is very willing to help those who are discouraged or confused. This attitude is typified by an interaction with WN. Mr. C asks if there are any questions on Harlow, and says "Miss N has a questioning look." WN says "I'm just not sure about the independent variable, but I'll get it." Mr. C answers, "We'll see if we can nurture it a little bit." Mr. D, on the other hand, tends to stress his own competence and to be somewhat intolerant of those who are less intelligent or knowledgeable than he, and scornful of the comments which his students make. The cluster 2 people in this class seem to get a lot of wrong answers and ask a lot of stupid questions by his standards. Even when they answer correctly, he may ask them another question which follows from the first, at which point they often get confused and cannot answer. In session 4 of this class, MR says she doesn't understand something and asks for help. Shortly after this, Mr. D discusses a girl in his last class who didn't understand the assignment and got a D on it. (Actually, two people in this cluster in Mr. D's class did fail the course). An especially anxious comment from Mr. D's class is made by DB. They are discussing experiments with rats and he asks the teacher whether rats ever go out of their minds because they are cut off from the experimenter.

Anger is rarely expressed by these people but sometimes it comes out in an indirect way. MO makes a speech to the teacher about how students shouldn't be able to fight test questions because "it's sort of like fighting city hall. I mean you made up the test and I don't like to argue because usually you've got an answer which is in your mind; ...and normally a teacher won't change his mind...Now when I think of it, it would have to be that way somewhat. Because you're our teacher...if we're going to actually get anything out of this course I think we'll have to follow close to what--the way you--your plan of thinking on different questions." This talk sounds somewhat guilt-inducing, especially given that he tried to argue about a couple of questions in a previous session and failed to get results.

Another example of subtle anger comes from CT, who when Mr. B asks for some negative effects of punishment, says "the person who's being punished could come to hate." But on the whole, these people are very compliant, and so anxious about evaluation of various kinds that at least during class time they aren't able to get involved in the material or look at it from an independent task-oriented point of view.

Most of this cluster's participation comes in the first half of the class, and, while there is a slight rise in enactment at the very end of the term which may indicate that some of the members of the cluster have become more capable of independence in the class, there is, on the whole, very little enactment.

The wonderful thing about these people is not what they do in class but what happens to many of them outside the class and in conjunction with it. We have seen that they are not very happy with themselves; this feeling of dissatisfaction seems to provide for them some impetus for change. Their manner of dealing with their parents was to accept their standards and avoid expressing any anger they might feel toward them. Now at this time in their lives, they seem to be looking for a different way of dealing with people, one which would allow them more independence, more of a feeling of self-esteem in their own right, and more freedom of expression. Probably partly because of their readiness for change, many of the people in this cluster report that this particular class was especially important to them, that it influenced their development in significant ways. Some of them report this influence during the course and on the final evaluation. For other, the importance of the course is not obvious to them until later. The ratings of the course and the teacher by this cluster are higher relative to the clusters after two years than they are immediately following the course.

The reasons for which this course is so important for them vary. For some, the development of a personal relationship with the teacher comes to mean a great deal to them. They tend to emphasize that the teacher cared about them, that he "went out of his way" for them. LC because much more involved in the class after the teacher asked her especially to tell the class about an experience she had told him outside of class. VR talked to the teacher about her personal problems with her parents and the liberal university in the last week of the term. When BP was upset about a particularly emotional class discussion, he discussed this with his teacher; the teacher found this important enough to discuss the general issue with the class, and later visited BP when he was in the hospital. This kind of thing is very important to these Cluster 2 people, because they have a special need to find older people who care about them. For some of these students the question of whether a teacher will listen to their confidences with sympathy is the most crucial aspect of that teacher's role. Thus JH says the ideal instructor should "run the class on a personal relationship level," "encourage you to bring problems to him," and "be sincere." For such a student, finding a teacher who is glad to talk to him can be a very important experience, and it may help him to overcome his anxiety in relation to authorities to some degree so that he can begin to enjoy cognitive academic work.

To some of the students in this group, a factor which especially involved them in this course was an independent project of some kind. Several of the teachers included such a project, usually an experiment designed and carried out by the student alone, in the course format. Many of the cluster 2 students stressed the value of this project on their final evaluations and even two years later. One reason why such a independent effort might be especially important for these students is their fear, in general, of being independent at all. To carry out a major project entirely on their own, probably represents for these people an important step away from the pattern of careful adherence to standards of others and fear of individual thinking. We would expect that many of these people were rewarded by the teacher for their hard work and enthusiasm in this regard, and such a reward might also be very significant for people who have grown accustomed to punishment or indifference.

These people are very unsure of themselves in the social as well as in the intellectual spheres. BR, for example, says in his interview, "I very much dread social intercourse." Because of this mixture of insecurities, it is often difficult for them to take part in a discussion, especially in a large group; the fact that they talked in class even as much as they did and weren't in cluster 8, seems to be a significant accomplishment and an indication of emotional involvement in the class. PK, for example, says in her interview that she was a discussion leader early in the course, and was involved from then on, that she loved the course and changed her major to psychology. In class, during the discussion of whether people should be called on, she says that this is the easiest class she has ever been in to say "I don't know" in, that "this is a good place for someone who wants to overcome" fears about saying this.

There seems to be an important relationship between the actual material in the field of psychology and the fact that these persons tended to become very involved in some aspect of the course. One way in which this seems to be relevant is that psychology is not as yet a tight-woven science which builds upon itself in a natural progression, and which is easy to learn as a list of "facts" to be memorized. It is a collection of various experiments, studies, and theoretical writings, which are difficult to integrate and which offer few solid answers to meaningful questions. These students, on the other hand, have for the most part learned in their past that there is truth and untruth, that things are clear-cut and unambiguous. Not only has it been important for them to accept what authorities say, it has been important for the authorities to be sure of themselves so that they can know what they are supposed to believe. It is important to them that they not be confused in their view of the world. JH, for example, describes himself, as a "non-drinker, non-smoker, not mixed up." Because of this predisposition toward intolerance of ambiguity, these people tend to find it difficult to adapt to the ambiguous field of psychology. BR, for example, "didn't like the idea that there isn't any proof for id and ego." MR said psychology was "too unstructured," and DS was angry at our metaphor check list, because he said it was "stretching it too far to apply metaphors to people." Sometimes these students try to deny the ambiguity in psychology so they can adapt to it. When asked what he thought about the idea that sex was a motivator in people, BP said "Well, why not, it's been used to cure thousands, that's proof enough for me"; and PL says that he "wouldn't take issue with Freud; it's a bit hard to believe at first, but it's lasted so many years it just can't be superfluous." But this kind of denial is hard to maintain in the face of the teacher's presentation of the field, and eventually these students have to find another way to deal with the ever-present contradictions in the field.

It seems to be important that refusal to accept ambiguity tends to be connected with compliance with parents and other authorities, and with belief that they know all the answers. Thus CG says, "I'm the sort who will read it and try to understand what he's saying, not thinking about disagreeing." RO says that if he were on a train talking to Mr. C, "if it was about psychology, he'd do the talking because he knows about it."

The problem of how to handle the ambiguity in psychology is accentuated for these people by the realization that once one acknowledges that nobody has the answers to some questions, then it is no longer possible to believe that authorities have the answers to all questions. This implies relinquishing to some extent the strategy of dealing with parents and others by believing absolutely in everything they say and trying as hard as possible to live up to their ideals. It implies that many questions are a matter of opinion, and that children may even hold different opinions from their parents. On the one hand, this is a difficult idea for these cluster 2 people to think about; but on the other hand, we have seen that they are really quite angry at some level and that they are hoping that they will be able to change in some way.

We would expect that given the issues with which they are concerned and their present strategy for dealing with those issues, the field of psychology would influence them to increase their acceptance of ambiguity and to begin to be less afraid to have their own opinions about important questions in their lives. This would be especially true when they feel warmly toward the teacher of the course, as many of these people do.

But the number of students in this cluster who change their major to psychology or change their career plans so that they can work in a field which is closely related to psychology as a result of this course seems too high to be explained on the basis of the teacher alone. This group of people must feel a peculiar affinity with the field itself.

One subgroup of people in this cluster seem to have an additional reason for appreciating the field of psychology. A number of these students were brought up in very religious, or at least, very strictly moral homes, where they came to think of things as either bad or good, and of themselves as sinful whenever they could not live up to the very strict rules taught by their parents. For them, it must be something of a relief to learn about a field which says that the expression of impulses like sex and aggression can sometimes be a valuable thing and their suppression can sometimes have harmful effects. Of course, relief is not by any means the first reaction expressed by such people. The relation between psychology and traditional morality is such that it is very hard for them to study the field. They are likely to become angry with psychologists, to think, as MK said, that they are perverted, or as RM said, that Freud is horrifying. But as in the case of the ambiguity discussed above, the flexibility which pyschology allows on moral issues offers an alternative way of viewing things, and to some of the students in this group who feel a particular need to change, this alternative may be helpful. One example of such a student is PL, who was surprised and pleased when his teacher allowed him to write a paper about guilt, and who wrote on his final evaluation that the course had influenced him by changing his "outlook on religion--It had pointed out to me that man is neither good nor bad inherently."

Cluster Three

Factor: HI: Discouragement

Categories: HI: Reparation
Independence

It is somewhat difficult to describe this cluster, because it only includes four people, and with such a small number there are few significant difference in the paper-and-pencil data. It is not as easy to see trends in the more impressionistic data. We can make out some interesting patterns; but with such a small number of members, it seems that this cluster is probably less important than some others in the general makeup of the classes a teacher is likely to come in contact with. Having said this, we can still look and find an interesting group of people, three of whom are in fact high participators and one or two of whom may be important in a given class. Basically, we would describe these people as depressed, but strong, the kind of people who use depression to spur themselves on to further growth and development of their potential. In addition, they find special reasons to be discouraged in these particular classes; but they are also especially strong in these classes, expecially caught up in the process of growing, in that they tend to get fairly deeply involved in the material and take a lot more of psychology after this.

The members of this cluster tend to say often that they are dissatisfied with themselves. KE says "I don't like things I see in myself in other people." "I've been persecuted by the way I talk too fast, kind of whine." TB said many times in class that he was a "slow thinker," that it took him a long time to think about Mr. B's broad imaginative questions. By the time he was ready to back up his opinions and say something, the discussion would be on something else.

When things go wrong for these people, they tend to blame themselves, and not turn much hostility on other people. For example, in relation to these classes, while they are very discouraged with the way it is going for them, they like their teachers a great deal and rate them very highly relative to the other clusters. Thus GC, while very disturbed at the way he was being treated by the teacher, still persisted in saying "I'm a firm believer in self-improvement." In assuming all responsibility themselves, they may even get upset if their teachers try to engage in any self-deprecation. When KE was asked what she found most annoying about the teacher, she said, "At first it seemed he was apologetic--the only experience he had to draw on was his class last term. He was an excellent teacher."

Concomitant with their tendency to place all fault on themselves comes a general feeling of guilt and fantasies that they may hurt or destroy others, especially children. BL, for example, describes the girls in his class as "bent physically and bent mentally" and says he only wants to have boy children. KE says she's afraid she won't be able to adequately love children, given the "deep drains" they will put on her; and TB says that he doesn't want to get married "because I don't want to have a kid. I would probably kill him."

Besides being worried about their own potentiality for hurting others, this group seems somewhat depressed about human nature in general. This seems to be most true for TB, who in a discussion of concentration camps says that people think the Germans had a monopoly on cruelty but that it's been going on forever, and who is preoccupied with wanting to discuss Lord of the Flies and questions of determinism and free will during class.

The members of this cluster do not expect their depression to end in any short period of time. Their projections for the future are gloomy. Thus KE says that in 10 years time she would like to be "serene and pleasant" but that she expects to be "confused and nasty"; TB says he'd like to be happy, and expects to be dead. The depression seems to be an integral part of their lives, not something which is only part of a particular stage in their development.

In spite of their depression, this group seems to feel that they possess an underlying strength and worth which is considerable. TB, in response to an interview question on how he and the T would handle an emergency, says that he would be "cooler" than the teacher. KE says that the teacher could speak to her as someone on the same mental plane, even though she wouldn't be able to make it with the T socially. She also mentions that she thinks she has an aptitude for the social sciences. Finally, there are some adjectives which they used to describe themselves which show a mixture of the strength and the depression--from KE, "hyper-sensitive, jealous, relatively intelligent, immature where it shows, mature where it doesn't, ambivalent"; and from GC, "intelligent, strong, serious, lonely (in the sense of a center of motivation), honest." The mixture of self-esteem and strength with depression and guilt makes us think that for these people it is important never to be satisfied with themselves because they want to continue to grow, to search for goals worthy of striving for, and to find new goals beyond the ones they have attained. They seem to be introspective people, which is perhaps one reason why psychology seems to appeal to them especially. Their introspection may be related to the fact that they need continually to reappraise themselves, to think about where they are in relation to where they would hope to be. They seem to be overachievers to some extent, though we have no significant data on this. They tend to see themselves as heading for professions which require quite a lot of preparation and hard work. Even the one female in this cluster is intent on having a career along with children. In fact, this desire is an important source of her problems in this class. In general, they are an independent group, involved in their own concerns and process of growth. They seem to see the material in this course from the perspective of these concerns, and find it fascinating from that point of view.

In addition to their general discouragement, the members of this cluster find reason to be particularly discouraged in these classes. Sometimes the reasons for discouragement are primarily connected with the students in the class. KE's most discouraging moments came in a vehement discussion with practically the whole class, both male and female, aligned against her, when she defended mothers who worked while their children were young. She became further alienated when she interpreted a dream as penis envy in class and shocked most of the other class members. It is difficult to discern the reasons for BL's discouragement since he talked very little, but it seems that when he did talk the class was prone to reject his suggestions. TB tended to talk slowly and lengthily and bored most of the class. He also wanted to spend a lot of time discussing the implications of Lord of the Flies and the class wasn't interested in doing this. GC's discouragement, on the other hand, stemmed mostly from a relationship with his teacher. GC identified with Mr. D at first and tried hard to win his approval, but Mr. D met his frequent approaches with scorn and ridicule. In general, one might say that their problems in the classes were linked to their independence, in that their attentiveness to their own goals and to the unique perspectives from which they view the course may not take into account the fact that others' goals may be incompatible with theirs. Their hopes for the course are idiosyncratic and they are likely to be disappointed to some extent unless they happen to meet a teacher or group of students who share their particular perspectives. They seem to understand this; and as we have already mentioned, they tend to place fault on themselves more than on others. In any case, they rate the course and the teacher very highly relative to other clusters. Their discouragement does not keep them from feeling that they gained a great deal from the experience. They all take many more courses in psychology and seem to feel that this course had an important influence on them. It doesn't seem that there's much that a teacher could do to make these students happier--for this group, discouragement is a part of work and growth.

Cluster Four

Factors:	HI:	Enactment	.01	LO:	Discouragement .01
		Support	.01		
Categories:	HI:	IN	.05	LO:	AE - .01 SE - .05

Perhaps the most clearly distinguishing attribute of the members of this cluster (which consists of 9 males and 3 females) is their age. They are significantly older than the rest, being on the average, between their second and third year of college, while most of this sample is composed of freshmen. An important subgroup of them, probably the most prominent members, is also especially intelligent. Thus there are certain natural factors which give this group an advantage in these classes, and, together with particular personality traits and backgrounds which we shall explore, help account for the independence and security which these students manifest in the classroom. They generally seem quite confident of themselves and are not often threatened by the teacher, the work, or the other students. They remain relatively independent while the other students are confused or anxious or angry, looking at the material relatively objectively and working with it in creative ways.

There is no one background which leads to this independence for all these people. Some, like EH, report that their parents gave them a lot of freedom and there was no need to rebel. They seem to have been able to empathize with their parents in a somewhat colleagueal way (CS describes his father as a "good man who has had an interesting life"). They have been able to differentiate themselves from their parents and become individuals without a period of violent separation. Some describe their parents as overprotective, like PP, who says his parents "should learn to be happy when their children go." They are able to separate themselves gently, without anger and with empathic efforts not to hurt their parents too much. Most of them, however, did have stormy periods, and in fact, many are still angry with their parents --usually for being too authoritarian. We would guess that there was a time when they were angry at almost all authorities and would have been likely to be more rebellious in this class, but at this point in their lives they tend to see this teacher as different from their parents and worthy of more respect. HT, for example, says that Mr. B "would be a fair guy as a father. He'd explain things. My father tells me to do things and since I'm stubborn, I won't. I'm easily won over if anybody tells me things more reasonably." RN says that Mr. C as a father of a teenager "would not have too many problems with control like some parents. He'd understand. He would not be like my family." It seems that one reason why the people in this group feel no need to rebel in this class may be related to a particular aspect of their independence, and may in fact be an effect rather than a cause. As part of their independence, it becomes important to them to keep a certain distance between themselves and the teacher--to avoid becoming embroiled emotionally. It seems that it would be easier to maintain a relatively independent stance when you were careful not to become too involved. This non-involvement probably is partly due to the fact that, being older, most of them have already chosen a major and plan to limit their investment in the field of psychology. But it also seems to be part of a well thought-out general philosophy.

This group shows a remarkable uniformity in its ideas of education. Their ideas parallel their personal independence and the kind of non-involvement discussed above. Independence is a value as well as a style for them and is a frequently-used adjective to describe themselves. They like to be, as RN put it, "free to move around and explore." The kind of class they like best is one in which they are free to discuss their own ideas. They like seminars better than lectures. They seem to feel, as HT put it, that while they like the information the teacher gives them, they can just as easily get that from the reading; as PP said, that the most important thing is not the material itself but the analysis of it--which is best done in a discussion. Their ratings of this class are closely tied to their desires for freedom and informality. If they saw it as unusually open to discussion, they tended to like it more; most of them did in fact see it that way. They were significantly high on the item "Students were free to comment" on the final evaluation. But if they felt that it was becoming less free at some time, they tended to lose interest and withdraw or express anger. Thus RN said that "since the first exam there has been animosity between Mr. C and the class. He became more authoritarian and the class lost interest right then. It's better when he's more democratic."

The desire for freedom doesn't keep these students from appreciating what the teacher has to offer them. In discussions of teaching machines in two classes, this cluster tended to emphasize that the teacher was an important part of learning, that he had valuable resources and was needed to guide discussions in fruitful directions. While they tend to favor colleagueal relationships with the teacher, where teacher and student work together on intellectual tasks, they also want to keep teacher and student roles clearly distinct. For the most part they are not looking for intense personal relations with the teacher outside of class, nor do they want him to become just another peer in class. It is important for them that a certain distance be maintained along with the freedom and informality which they desire, so that they can carry on their independent work and at the same time benefit from the expertise of the teacher.

Having looked at some of the background and ideas of these students, we can now look in more detail at their actual behavior in class. Their comments and questions are generally characterized by good integrative ability. They very frequently bring up readings which are relevant to the topic discussed, either readings from other parts of the course or things they have read on their own. They are also likely to contribute relevant personal experiences and expertise, as when PP played an important part in a class discussion about autistic children because he had worked with them. But they do not rely only on past experience and knowledge to bring new ideas into the class. They are also busy thinking about the new material which is being discussed. They have ideas for new experiments or alternative hypotheses or explanations for data. If a teacher is discussing a theory for the first time, this group is likely to suggest additions to it.

The members of this group seem to look at psychology from individualistic perspectives which to some extent limit the ways in which they are likely to be influenced by the course or to contribute to the course, but which also can enrich the class by broadening the perspectives of the teacher and the other students. One source of the particular vantage points from which these people view the field is related to the fact that most of them are already extensively involved in another field which they are planning to major in. Some members of other clusters for whom this is true tend to respond to this fact by derogating psychology for not being as good, as scientific, as concrete or as interesting as their fields. They need to defend their choice by carefully avoiding investment in possible alternatives. But the members of this cluster are able to enjoy both at the same time and to use each to enrich the other. Thus they are able to use their knowledge of other areas to contribute to discussions of psychological questions, as when DW and EH both talked about the potentialities of computer programming for use in teaching machines, or when natural scientists talked about the construction of good experiments or about physiological aspects of behavior. They also can find psychology useful in relation to their fields, as with PP, who is interested in its relevance to speech therapy, or DW, who wants to learn about industrial relations and production supervision. Even those few students in this group who are planning to major in psychology have already made this choice and have some expertise and investment in a certain sub-area of the field such as humanistic or experimental. Therefore, they are also in the position of having individualistic perspective in this respect.

Aside from involvement in another field, there are more general and personal reasons which bring these people to look at the field in their own particular way. For many of them, these reasons involve a desire to be able to apply psychology to their lives in certain ways. Thus RN on his final evaluation said he wanted to "develop a knowledge to prepare for a life I can enjoy," and wanted to "learn more practical knowledge and learn to live in the world." JT said in class that the object of a good course was to "get people to think about the material and learn to apply it"; and MK said the best thing about the course was the "opportunity to apply the material to the outside world." Sometimes there are more general philosophical issues which interest them. EH says the best thing about the course was "that it made me more aware of some of the seemingly universal predicaments in which man finds himself in relationship to his own self interests and the interests of others." The worst thing, he said, was that it didn't provide enough solutions to the above. CS felt that his "primary duty" was to understand himself and others and chose history as a field because of this; but CS also found psychology relevant. ("Anything that helps me understand my environment is good.")

So, for a combination of personal and professional reasons, this cluster tends to view the course in an individualistic manner, and to make contributions in class which stem from the way of looking at the field which interests them the most. This includes for many the idea of applying psychology to the outside world and to their lives. That is one thing they will tend to try to do as a part of the classroom discussion. Other contributions vary from person to person depending on the interests of each.

On the whole, this cluster is not very rebellious. They tend to see their teacher as a benevolent authority who would make a good parent; as AG says, Mr. C as the father of a teenager would "let his son have independence, would give him certain decisions and then work up to full independence." Since they hold this view of the teacher, they have little desire to rebel. In fact, the cluster 4 people are usually supportive of the teacher while other clusters are fighting. But this group is not significantly low on rebellious factors either; they have their moments of disagreement. Often when they disagree with the teacher, it is over intellectual questions and has little of the quality of a personal attack. Thus JY considers himself a learning theorist and his teacher a Freudian and expects that on a train ride with Mr. C they would have a debate about this. Generally, this group seemed opposed to teaching machines and utopian societies set up by psychologists. Thus CS said in class, "You spoke of intrinsic rewards in teaching machines--what if a student doesn't feel a reward just from filling in a blank?" VV says he heard about a utopia which only lasted four years-- "and it was supposed to be one of the better ones." As can be seen above,

10

it is difficult to tell when disagreement merges into attack, but it seems that the most rebellious moments for this group come when the teacher is being most authoritarian. When Mr. D is talking about the term paper and stressing his stringent requirements and the high possibilities for failure by the students, VV asks a series of hostile questions of the nature of "Should it be typewritten?", satirizing the formal authority aspects of the teacher's performance. This example also illustrates a certain kind of composure which some of these students are able to maintain even when they are angry, which allows them to make subtle attacks which are difficult to recognize as such, since they don't appear to be upset. It is rare that these students get very angry, however, for when they think the teacher is wrong about something, they can usually back up their claims well enough that the teacher responds to their demands right away. Thus, others of the rebellious clusters argue about exam questions at great length, sometimes winning and sometimes losing. But VV, rather than arguing, corrects a mistake which the teacher made on the exam, so that it is immediately clear to him that he was wrong, although it is such a subtle point that the rest of the class is baffled. Unlike cluster 1 where, for the males, the lack of rebelliousness meant non-participation in the struggle for power, this cluster is involved in that struggle. They are more likely to argue with fellow students, mainly the stronger males, than they are with the teacher. And they are not averse to displaying any superior knowledge or competence they might have at moments when this contrasts with lesser ability on the part of competitors.

Generally, the members of this cluster like to think of themselves as above the other class members. An example of this is when VV says, "Do you think these (teaching) machines would be better for younger kids? I found them boring." More extreme is AG's titling of the students in his class as "those who ask simple-minded questions and those who don't."

It should be said that there are some important differences among the members of this cluster and that some of the characteristics we have mentioned are more noticeable in some sub-types than in others. We can talk about three divisions which seem relevant: those being the low-participating people, the involved males, and the involved females.

The low participators are not really very noticeable in class. They are independent, and bring up readings and original points; but they don't talk very often. While their remarks are helpful, they are not very often striking. They are younger than the average for this group, while for the most part they do fit in with the trends so far discussed. Most of the information about them must be gathered from interviews and evaluation forms. It would be hard for a teacher to distinguish them from some of the other low participators in class.

The males who are high participators in class tend to get into a special relationship with the teacher. They feel especially far above the rest of the students. While they are somewhat ambivalent about showing that (PP describes a girl in the class as "caught--like me and everyone else--between wanting to feel good and assert your worth when others aren't quite so good"), they do display their superiority quite frequently in class. They are very ready to answer difficult questions or suggest subtle analyses of data or talk about expertise they have gained from experience. They are ready to support the teacher by answering questions that no one else can, by making discussions more interesting, and by maintaining intellectual work when other students are dependent, anxious, or angry. They sometimes take a mediating position between the teacher and the other students, explaining what each means to the other.

The teachers involved with these students come to appreciate them and probably even to some extent to "count on them" as VV put it. Their rebellious moments are infrequent enough so that they are not too threatening. They obviously like and respect the teacher. They are quite competent and interesting people. But they sometimes carry their confidence a little too far for their teachers to feel comfortable with them. PP, for example, when Mr. B was trying an experiment on the class, would make comments like "Suppose we catch on to what's going on?" and "Was yes the reinforcer there?" VV, in a similar experimental situation which threatened much of the class, suggested "what if I got an A in this course?" as a hypothesis. They sometimes begin their statements with authoritative prefaces like "The point is here." They sometimes interrupt the teacher to make a comment without being called on. Finally, they are always very colleagueal and sometimes even a little condescending toward the teacher--as with VV, who says that Mr. D has led a "sheltered life" compared to him, who, while he may have expertise, lacks experience; or PP, who says that in an emergency, "the teacher has been my superior" so he would let him lead. Actually, he would rather lead himself, and in fact, come to think of it, he would only hand over 1½ reins. This kind of cockiness leads the teachers to try to squash these students once in a while. In the second session of Class D, for example, VV volunteered an answer to a difficult question. Mr. D was pleased enough that he asked him to explain it to the class, and then complimented him on his explanation. But when VV tried to answer the next question without being called on, the teacher ignored him and looked for someone else. Mr. B oscillated all semester between accepting PP's contributions with pleasure and ignoring them; as PP said, "I'm not sure how he'll react to me. He's sometimes very pleasant, other times he'll slap my wrist and bark at me." But such obstacles did not seem to bother these students too much, as they maintained their confidence throughout the semester. Generally, they were able to maintain a good relationship with the teacher: they saw themselves as working in tandem with him and the teacher appreciated the quality of their work. They did not tend to get to know each other outside of class, but in class they felt more identified with each other than is true with most students and teachers.

The most crucial fact about the involved females in this cluster is that they are very much attracted to the teacher. HT, for example, when asked what the T's wife would be like, said, "Good Heavens! That's the $64,000 question."

This may be explained partly by the fact that they are not very much younger than the teacher. Also, while they are very intelligent and proud of their ability to do intellectual work, they feel angry at men and have some trouble feeling that work and relationships with men are compatible. (HT doesn't want to get married because, she says, she doesn't want to be subordinate.) In this teacher they find a man who, in his role, is likely to appreciate their competence. In any case, they are very strongly attached to their teachers, but are careful to keep this hidden and to maintain the overt relationship with the teacher at the traditional distance. They, like the other members of this cluster, do not get to know the teacher outside of class. What they do is to put a great deal of energy into the classroom or into work for the course outside the classroom. They try to gain a special position of favor with the teacher through their intellectual capacity and hard work. JT feels that she has succeeded with this strategy in class. She feels a closeness with Mr. D. She says that the best thing about the class was that she thought he liked her and that in handling another girl's crush "he was smug about it and gave me a knowing look." She feels a special rapport with him, describes him as "shy" and looking "very young when he smiles." She can be colleagueal toward him, as when she has suggestions which might have helped him in the course. It does seem as if Mr. D did appreciate her efforts and felt a special identification with her not unlike that with the involved males of this cluster. It also seems that HT succeeded with a slightly different strategy. While she didn't participate as much in class, she must have worked very hard outside of class, for she got one of only two A's in Class B. These females succeed in pleasing the teachers intellectually. In that sense, the use they make of the energy derived from their attraction to the teacher is adaptive. But they are not entirely happy with the results, because the teachers do not get involved with them personally or attracted to them sexually. While this would not really be expected, given the strategies they were using, we would guess that they still had some fantasies that romance would somehow develop.

Cluster Five

Factors:	HI:	Contention	.01
		Challenge	.01
		Enactment	.05
		Concealment	.05
Categories:	HI:	Moving against	.01
		Counterdependency	.01
		Resisting	.05
		Denying Depression	.05
		Participation	.05
	LO:	Dependency	.01
		Anxiety Expression	.05

Before beginning our description of Cluster Five, we should perhaps remind the reader that Clusters Five and Six were together in the original cluster analysis and that we split them at the midpoint of their scores on Factor One: Enactment. Since this is the case, they share many common characteristics, the most noticeable of which is their common rebelliousness. But it also seems to be the case that each of them has many distinctive characteristics and an essence of its own. Thus, having given this reminder, we shall proceed to treat each as a cluster in its own right.

For the members of Cluster Five, all of whom are males, work in a class is inextricably tied to rebellion. Both are manifestations of a deep involvement with the teacher and the course work. Unlike Cluster 4, whose involvement with a given course is necessarily limited by their commitment to other matters, the students in Cluster Five have potential at the beginning of a course to be some of the most deeply involved in the class. But involvement has for them certain implications which tend to lead them not only to very productive and creative work, but also, in the same class, to extreme hostility and resentment.

The members of cluster five tend to see themselves as exceptional people. We can see evidence of this in the class sessions where they seem very confident in themselves, sometimes almost arrogant. EL, for example, once explained to the class, "You've got to keep in mind that Skinner is a rat man, here in his fullest bloom." Further evidence is provided by the adjectives which they choose to describe themselves on the follow-up questionnaire. Words like "intelligent," "versatile," "competent," "well-read," "good-looking," and "mature" are common in their self-descriptions, and they sometimes veer toward "proud," "unimpressed," "arrogant," or "aloof."

The feelings of superiority which are an important part of the identity of these students are accompanied by expressions of contempt for ordinary or common people, in our data by most of their classmates. They are particularly contemptuous of people whom they see as weak, conforming, dependent, and afraid to be independent. CR, in arguing for the feasibility of utopian societies, said, "You've overlooked the fact that some people have an immense fear of breaking the status quo." PM, in a discussion of whether people should be called on, said, "There's enough bull already without calling on scared people." They don't like people who they think are talking to please the teacher. WR says about SR, "She tries to clear up facts. She always has something to say even if its the same as Mr C. She's obnoxious." PM, when asked what the worst thing about the class was, said "a few students (like FA) who buttered up the teacher and put him on the spot with ridiculous questions." The last part of this statement is an example of the discomfort of these cluster five students with their association with the other rebels in the class, the cluster sixes. They tend to be scornful of them, to think, as WR said about WI, that they "make stupid comments" and "challenge the teacher on trivial points."

The strength of the assertions of confidence and contempt for others by this group seems to indicate to some extent that they feel a need to deny both depression and tenderness in themselves. Their depression seems not to center around the question of whether they are adequate in relation to most other people, whether they are acceptable or respected by other people, but rather around the question of whether they can be true to themselves. They know that by other people's standards they are intelligent (they had the highest scores on the college board examinations of all the clusters) and creative (they were also highest on the creativity scale of the OAIS). But they seem to have inner standards which require a good deal more of them than acceptibility in the eyes of others. They tend to be introspective and a relationship to themselves which involves respect and integrity seems to be very important to them. It is important that their motivation for action should come from themselves, not from the desires or the potential sanctions of others. BN, for example, says, "I'm impulsive. I do things I like to do, otherwise I don't'. Studying for example--I don't do it for a grade. I play piano and guitar." There was a sign, "Aren't there things you'd rather be doing?" They want to be able to feel that their creativity springs from within themselves, not that they are accepting the dictates or the advice or the findings of their parents, their teachers, or their society, but that they are creating something new. They have ideas which are better. One good example of this kind of attitude is DF, a black student. When the teacher was leading the class in a discussion of which of several different alternatives would be the best way to go about raising the Negro's social position, DF argued with the teacher saying things like "What if he doesn't want to have his social position raised? Maybe Blacks don't accept white's standards of what they ought to be." In a discussion of utopias, he asked, "What if people want to strike out? Do the people in control think enough of the individuals and their attainments to give the reins back to them?"

There is some tendency for them to see their lives in romantic or poetic terms, to conceive of themselves as living intensely and deeply. MI is more like this than any of the others. In his interview he describes himself as "Johnny Appleseed. I have theories on trees. Love is like trees. The pine tree is love for beauty...Love starts from an acorn into a great white oak. Help people to love in their love. Sequoia as pine--beautiful love of beauty." MI also is the best example of the intensity with which this group is likely to involve themselves in certain aspects of their lives. During the semester of this class he was very involved in a relationship with a girl, and at the same time, with philosophical questions about the meaning of life and the direction in which his own life might go. As he describes it, he was so caught up in these problems that he let all his courses go and slept 24 hours a day. By no means all of these students describe themselves with such intensity, but they seem to share a view of themselves as heroic figures, as leading lives which are somehow apart from and beyond the common. They are proud of their uniqueness and individuality, proud of the ways in which they are alone. Probably one reason for which it is important to them to deny warmth they feel for others is that such feelings might imply that they were on the same level as those others. They have enough need to be special and enough doubt about their ability to do so that they need to derogate those with whom they compare themselves. But their contempt for others does not extend to all people. They do find other people for whom they feel a great deal of affection and with whom they are likely to feel an immediate and almost magical closeness. These others are people who are similar to themselves, who also feel different from and above most people. The members of cluster five tend to greatly enjoy the company of those who they feel are also somehow special or elect in their own right.

This cluster is all male,and maleness seems to be one of the bonds which ties them to those to whom they feel especially close. When this group mentions females, it is usually in the context of a purely sexual relationship, and more or less facetious. The answers to the following questions are typical: "Would you have felt any differently if your teacher had been a female?" From BG: "I would only hope that she was a good-looking one." From PM: "I would have been more interested if she was a good-looking (I mean this as a serious response). "What names do you remember from class?" From PM: "PK. She had nice legs." "When was the class most interesting?" From EL: "It was most stimulating when all the pretty girls were there." These comments would seem to indicate a lack of interest other than sexual in females

This evidence is somewhat counterbalanced by what we already know of MI's deep involvement with a girl, and by the introspective and somewhat artistic nature of this group, which would seem to lend to them something of an understanding of feminine concerns. We also can see them competing with other strong males in what could be a display for the females in the class, or symbolic fights about who should take possession of them. But on the whole, it seems that the main loyalty of this group is to their fellow males. In fact, their display is more for the benefit of the males, perhaps even the ones with whom they may be fighting.

One of the ways in which maleness is displayed by the students in this cluster is by their showing that they are not afraid to talk about topics which might arouse anxiety in other less confident people. In a psychology class the anxiety-arousing topics may center around unconscious motivations, sexual and otherwise, which people don't like to recognize in themselves. There seems to be some tendency for this group to accept the idea of unconscious motivation more readily than some of the other clusters. More specifically, PM brought up two such anxiety-producing topics when, in the first session, he gave "fear" as an example of a primary motivator, and later when he said, "I would disagree with the idea of a standard sexual response, because the sexual drive can be met in a lot of ways." Comments like this may be designed in part to test out the teacher as a male, to see if he becomes anxious or uncomfortable. This teacher responded with, "Yes, for example, it can be satisfied by perversion, and then there's natural heterosexual behavior." WR is one of the most successful at the kind of male display engaged in this cluster. He says in his interview, "I went in for a project. I didn't have any ideas...the correlation between breast size and academic performance (this was in front of the girls)...the psychology of kissing...homosexuality... the height of grandmother with steel production"; and in class he once said, "isn't that part of a female...being attracted to men?"

The issue of homosexuality seems to be salient for most of the members of this cluster. They are likely to bring it up in class if anybody does and seem to feel somewhat attracted by the idea at some level. For most of them this probably is not a conscious fantasy, but one member of this group seems to personify this aspect of their personalities. The following are quotes from the interview with BN: "Mr. C is intelligently, sexually pleasant ...he has a big square chin like in Playboy. I'm not on the make for him. There's no homosexual thing there. He's coarse and base in a relaxed sort of way...I didn't develop much of a personal relationship with Mr. C. I did with a philosophy fellow. He was plain looking--had my sense of humor. He was also preoccupied with sexual intercourse. Mr. C is married." The idea that this cluster would be interested in homosexuality at some level has some intuitive appeal, since we have already mentioned that, at least at this stage in their lives, males are usually the only people to whom they can feel very close.

An important implication of the characteristics of this cluster which we have described thus far is that the teacher is likely to be one person with whom these students might be interested in developing an involved and close relationship. The teacher is in all of these classes a male. He is above the rest of the class and likely to be quite intelligent. Besides this, he has additional magic due to his position of authority and his added age and experience. There seems to be some tendency for these students to describe their fathers as either authoritarian or often absent or both. It seems likely that they would be somewhat interested in developing a personal relationship with an older male, and indeed this seems to be the case. They tend to find very appealing the relationship of favorite son to the father-teacher. They make some attempt to set up a situation where their teacher is almost like a guru, where the teacher and student are close to each other and learning is through the personality of the teacher as well as through his ideas. They tend to fantasize and work toward what might almost be seen as a co-teaching model, where they and the teacher work in tandem to teach the ordinary students, where they help the teacher out when he needs it and act more as colleagues than as underlings.

It seems somewhat paradoxical that a group which places a high value on private work, work according to their own inner standards and not under pressure or sanctions from authorities, should also have the potential to be perhaps most involved with a field and its ideas when they are at the same time involved with an authority figure who represents that field, i.e., the teacher. But if they find such a relationship with a teacher, it is not so much as an authority figure that they relate to him. It is more as a person, another male who is similar to them, who can understand them, and with whom, since he is additionally a teacher and a father figure, they can identify with and learn things to develop their inner strength further. Since this is the kind of relationship which they seek, it is very important to them that the teacher be what they consider a strong person. If they see signs that he might be a weak, silly, or dependent person in their eyes, or if he seems to need to depend on the strength associated with his role as an authority rather than his personal strength, then they will not be interested in seeking a special magical relationship with him, nor will they be as likely to be involved in the course as a whole. PM, for example, worried that his teacher might be weak or effeminate. In his interview he said that he would give the following hint to a friend, "Don't take the teacher as being effeminate. He gives an effeminate image, but he isn't like that at all." In discussing what the teacher's wife would be like, he said, "It's tough because it's hard to tell if he could be dominated by her or if he is just being democratic. Hopefully democratic, but it could be dominated." On the follow-up study he said that what he liked least about the teacher was that he was effeminate.

Much of the work which these students do in the class is directly related to their relationship with the teacher. At the beginning of the class, they do not tend to be anxious and dependent like many of the other clusters. They are likely to be exploring the potentialities of a relationship with the teacher. They are usually the first to break out of the various emotions typical of the early sessions and begin an enactment phase. Part of this enactment takes the form of a willingness to help the teacher when he is feeling somewhat uncomfortable. If he asks a question which no one can or will answer through fear, resistance, or lack of knowledge, it is likely to be a cluster five who will step in and give him the answer he wants, even though it might not be the kind of question which they are particularly interested in. Or if, as happened in Class 12, the teacher has somehow set up an embarrassing situation where he is not able to give the students the degree of freedom which he had implied, it may be a cluster five (in the case of BG) who extricates him from the difficulty by proposing an integrative solution which satisfies the class. This group can show a remarkable empathy with the goals and emotions of the teacher. Especially at the beginning when most of the students are too involved with fears of their own to consider how the teacher might be feeling, the fives can be very helpful.

There is another kind of work which is somewhat more in character for this group and only related to the teacher insofar as it is motivated by the involvement with him and helps make his class better. This is the creation of new ideas in class. Cluster five tends to greatly enjoy the discussions in class, especially if they feel close to the teacher. EL, for example, says in his interview, "I like the material. I've done a lot of reading on my own...I love participating in class." They, like cluster four, tend to bring in outside readings and experiences and apply them to the material in class. These contributions are likely to be quite impressive. But they also go beyond this kind of application more than cluster four is able to and expend a great deal of energy in the course of the class itself thinking about the material, discussing it and creating new ideas continuously throughout the term. They tend to play a major part when the discussion is freest. If the teacher turns the class over to the students for a day, or if he introduces a structural change which allows more student participation on a more colleagueal basis, then the Cluster Five students are likely to participate more and become very involved in what are likely to be excellent discussions. They tend to feel an identification with the teacher when they are enjoying the class this much, as when DF said to Mr. D, "That's what I noticed myself doing while I did it; what you just said." They also are likely to volunteer to be discussion leaders more than once, as PM did in Class B.

The work which these people do outside of and in conjunction with the class reflects their concerns about integrity and working for themselves rather than to please anyone else. From the teacher's point of view, it must seem very erratic. They are likely, on the one hand, to fail to hand in written assignments or to read the assigned material. They will skip lectures which they are supposed to attend and come in late to class without seeming to feel very guility or worried about any of these unorthodox kinds of behavior. But on the other hand, if they are involved with the course and the teacher, they continually surprise him with unassigned work which they have discovered. One day when Mr. C had forgotten to tell the class about a special lecture, two of the members of cluster five had found out about it and gone. Another day in the same class, two of this group had not handed in an assignment which the teacher was giving back, and a third one had read an article which the teacher had never been able to understand himself and written an excellent paper on it. They are likely to remember things from the text during class discussions which the teacher has forgotten, and to be able to explain things to the class which he doesn't know about. When they do work on papers or readings they tend to become very interested in their work, to work very intensively and turn in exciting creative products. Theirs are the kind of papers from which the teacher learns something he never knew or through which he thinks about a problem or issue which had never occurred to him. The problem from a teacher's point of view is that this group is sporadic in their production of such works, such that they may not become involved in this way in any of their classes in a particular term. Their involvement, once again, depends to some extent on their relationship with the teacher.

We come now to the other face of this cluster, the rebellion which for them must inevitably accompany creative enactment. We have seen that it is important for these students to be different from other people, to be alone in an important way, in order to maintain their personal integrity as they see it. The most extreme case in this cluster of withdrawal from others is BG, who seemed to the observer in his class quite crazy. A somewhat schizoid nature seems to be an essential aspect of this cluster, for the separation from other people, the different perspective, probably is an important factor in their ability to be creative, to think of new ideas and integrations.

We have also seen that the teacher is likely to be one of the people with whom members of this group feel a magical union and closeness. But it seems that this kind of closeness, while very important to this cluster, is at the same time very threatening to them. They seem to be at some level afraid that if they become too close to another person it will mean for them a loss of integrity, a betrayal of their loyalty to themselves and their ideals. It is very important that they be able to maintain their right to withdraw from even these special relationships at any time they wish. If the teacher calls on them to answer a question which they didn't volunteer for, they are likely to answer it in a contemptuous fashion, making it clear they would rather choose their own times to talk. BR seems to be somewhat uncomfortable with Mr C because, as he says, Mr. C as a father "would be hurt if a boy said I don't have time to talk to you, Dad."

While this group has special positive feelings reserved for older authority figures, these figures also represent a special threat. An important part of the meaning of authorities to this cluster is their desire to force others into their mold, to use the sanctions available in their position to take away the freedom of others to grow in their own way, and force them to change in the directions which they, the authorities, believe in. This cluster tends to see the school and university system as a whole as a repressive one, one which allows them neither to develop their creative potential in their own ways nor to develop relationships with teachers which are not centered around formal role-oriented teacher-student behavior. In a new class, this cluster needs to test out whether they will be allowed to be independent and creative, and they tend to be mistrustful of claims that this will be the case. When Mr. B changed the class into a circle and invited increased student participation in discussions, PM needed to ask more than once whether the discussion would be graded. If it were, he would not have been able to enjoy taking part in it, because the implications would have been that he was doing it for the grade, not for his own reasons. This group on the whole tends not to trust authorities, and it is important for them not to comply with their regulations to avoid punishment. They often, in fact, will go so far as to do the opposite of what they might originally have wanted to do if it means going against the wishes of an authority.

It is important to this group that the teacher be a human being, and not try to maintain a front that he is perfect or all-knowing because he is the teacher. They want him to be strong, but part of strength is acknowledgement of failings. When they talk about the teacher, they are not reluctant to see his limitations themselves. On the question of what the teacher would do in an emergency on a train, they see him as being strong, but not unselfish, and usually no more heroic than they themselves. BN, for example, says, "if there was enough danger he'd organize people. But in an extreme situation he'd save himself first." WR says, "If the train was on fire, he wouldn't come back 10 times, but he'd help." They are also not averse to reversing roles and interpreting the teacher's behavior in psychological terms. WR, for example, said about Mr. C, "All his sex examples are reaction formation. He repressed it when he was young so now he can talk about it."

This group is happiest in a colleagueal relationship with the teacher. They know that they have good ideas, and on the interview question of what they would talk to the teacher about on a train, they seem to savor the possibility of meeting with him on an equal level and comparing their theories. EL says, "There are things I'd like to talk to a person with his training about. Anything involving behavior with people intrigues me--I have pretty good explanations. I'd like to complete them. WR says, "I'd sit and ask him his plans. Ask him about his speciality. Ask him what course to take next semester. Ask him about work he's done. Tell him about some of my own theories."

On the other hand, if the teacher is not willing to allow or encourage colleagueal kinds of relationships, if he stresses the aspects of his role which involve the invocation of his authority, the cluster five students tend to be unhappy with the class and angry with the teacher. They are insulted if barriers are set up which define the teacher as alone and unreachable and above all the students. They want to have a chance to be seen as people, so that they can then show that they are themselves superior and deserve a special place with the teacher. They do not like to be condescended to; if they are arguing with the teacher, they will reject any implications that they are just being silly, or that they are incompetent or wrong or that they do not know enough yet to be ready to argue. They want to be seen as competent individuals who are capable of disagreeing with the teacher in a colleagueal, intellectual fashion. One of the most striking examples of an action by a teacher which angered this group occurred in Class B. After Mr. B's innovation of the circle discussion group, the members of cluster five were working very hard and taking a major part in the discussion. They were also spending some time arguing with other students about psychological issues, such that Mr. B was prompted in one session to comment that he and some of the males in the class were probably scaring some of the class members by their strong talk. When several sessions later the strong talk of this cluster turned to an attack on one of the teacher's most preciously held tenets, Mr. B made a long speech about the "subversion" of the discussion which had been carried out by the member of cluster five. He said that students should first learn things, then understand them, but not criticize until these first two steps were thoroughly mastered. After this class, he began to spend more time lecturing and was more continously in control of the class discussion. These students felt that their freedom has been betrayed. Their teacher had retreated from a colleagueal into a formal authoritarian position. PM was especially affected by this move. In the next session, he asked, "Why is it you say that you should let anger out when other people admire people for hiding it?" Later, in a discussion of activism on campus, he said, "The people who object are going to pull out anyhow." In fact, he participated less after this incident and was less involved in the class.

In his evaluation of the course, he mentioned as a criticism another incident which had similar implications. After the class changed into a circle and Mr. B began to call the students by their first names, EL asked Mr. B what his first name was. Mr. B answered that he preferred to be called by his last name. This was important enough to PM that he mentioned it after the course was over.

The fear of becoming too close to others and the need to withdraw even while approaching, in combination with mistrust of authorities and the actual unwillingness of these teachers to maintain personal and colleagueal relationships without exercise of their formal authority leads these students to rebel in the classroom. The attacks which this group makes can be very broad and sweeping and extremely hostile. This is especially true early in the class when they want to test the teacher's reactions. WR, for example, when the teacher was trying to do an experiment on ESP with the class in the second session said, "I don't see how this will prove anything. It's just guessing numbers." PM, when Mr. B was talking about sublimation, said, "Is beating up on a doll really constructive though? Wouldn't that give a person some stress and he'd go around beating up on furniture and all?" A little later he asked, "Is it just a hasty generalization that the children of psychologists are all screwed up anyhow?"

Usually this cluster is happier if the teacher is skillful in most areas of teaching, if he is strong in expertise, runs good discussions, and is well acquainted with the various aspects of his field. But the function of the teacher which they do not like and which they are most likely to flaunt and attack is that of the formal authority. They do not want to be forced or pressured into doing or believing anything which they do not want to. PM, for example, in answer to a loaded question from the teacher, stated, "I think we can all tell what you're looking for, but I don't see how it would be. I don't see how you can assign that term to such an action." One frequent method of attack by this group is to ask in a resentful fashion about the details of the requirements for an assignment. This is an especially adept weapon, when, as with Mr. C, the teacher is trying to present it as primarily a learning, not a grading assignment and doesn't want to face the formal authority implications which it has.

This brings us to another aspect of the revolt of these students, that is the skill with which it is carried out. The empathy of this group with the goals of the teacher enables them to be very helpful to him at times, and also means that they are sometimes able to express feelings which the teacher in his role is not able to communicate but is likely to feel, such as contempt for certain kinds of students. But this same empathy also gives these Cluster 5 students a particularly adept means of attack when they are angry. They can guess which issues the teacher is very sensitive about, which kind of attack would make him very uncomfortable or angry. Combined with their skill in sensitivity is a more general intellectual skill which is also useful in attacks. Thus the excellence of their ability to apply and create which can contribute so much to the class also enables them to defeat the teacher in arguments, to refute claims which he might have made, or even, as happens fairly frequently with this cluster, to catch him on a questionable or wrong answer to his own exam question.

One aspect of the rebellion of this cluster which distinguished them from some other clusters is that they refuse to be defeated. Just as it is important for them that their arguments be taken seriously as intellectual colleagueal differences, and not belittled as lacking in knowledge or ability, it is also important to them that they not be clearly beaten in an argument with the teacher. They are able, fairly often, to win such arguments but even when they seem to have lost, they never admit it. An example of this can be seen in WR's argument with Mr. C in session 19, the transcript of which is included in Chapter 5. In the session before this one WR had actually succeeded in convincing the teacher that he should accept different answers to one exam question. But in this session he has an argument about a different question which Mr. C is not willing to accept. The debate continues for a long time, and finally ends with WR saying, "I don't know...I just don't like the question."

The erratic nature of the private work of this cluster and the mixture of rebellion with their work in class makes it difficult for most teachers to appreciate their presence in the classroom. And the demands for steady work and a willingness to learn what the teacher thinks is important in most classrooms make most institutionalized educational experiences unpleasant for this cluster. They are very clearly underachievers, having, in spite of their superior intelligence, an average grade point of just over a C. In most cases, this group was not entirely satisfied with their experience in this particular class either. Their participation tended to be the highest in the beginning and to drop off about at the point where the teacher tended to make more control of the class. This cluster seems to feel at some level that this process of taking over is something of a betrayal, that it implies that the work which they have been doing is inadequate in that it reduces their freedom, and that it relegates them to the position of another student in the class rather than a special aide and friend to the teacher. They tend in their evaluations to say that the teacher was inadequate as a person with whom they might become close to. On the scales which were significant, they say that he was not enough of an expert, not enough of a person, and was a bad facilitator. They also imply that he did not allow them as much freedom as they wanted. On significant items, they said that "Students were not free to comment and criticize" but that "Students did volunteer their own opinions," implying, it seems, that while they did express themselves, this expression was inhibited by the teacher. Displeasure with the course was by no means unanimous in this group. They seemed to appreciate especially sections B and C, where there was the most discussion by students and the least emphasis on grades. In section C, where their rebellion was treated as worthy of serious consideration and discussion in class (see the transcript of session 19) some of these students became very involved, felt that they had gained a great deal from the course, and made contact with the teacher after the course was over. It seems to be generally true that this cluster has strong reactions to these classes. Sometimes, if a good relationship with the teacher has developed, these evaluations are strongly positive, as with WR and MI, who both rate the teacher superior and want to make their careers in psychology, as a psychiatrist and psychology professor. Sometimes the reaction is very much negative. CR, for example, commented on his evaluation form that "the course should be abolished" and described it as "tired, bored, uninterested students enduring another rather meaningless hour"; and BG stated that "After taking the course I felt that psychology was designed to keep a number of people busy while the rest of us worry about making the world go around". Finally, some students, like PM, maintained an ambivalent attitude throughout the course. He stated that the course was "superior (though the lecture reeked)" and that what he liked most about the teacher was "his knowledge (as a person I despised him)".

When asked about their expectations for their futures, cluster five seems to be quite optimistic. They expect to be able to work through their anger at authorities in such a way that they will be able to be creative and productive persons, maintaining their integrity in the process. We would expect that some of the members of this group would become some of the most creative leaders of the next generation.

Cluster 6

Factors:	Hi:	Contention	.01
		Challenge	.01
		Discouragement	.01
Categories:	Hi:	MA	.01
		CD	.01
		RP	.01
		RS	.05
	Lo:	Level One	

Indifference is one of the major sources of identity for the members of this group. It is important for them to say that life, people, and this course aren't important to them. WI says that in the course he was "just trying to get by..do as little work as possible and still get a decent grade without getting wrapped up in the course. They want to deny any significance which their discussion or argument in class might have held for them. JS says "I hope he (the teacher) didn't take me seriously. I was just arguing for the sake of arguing." WI says, about the confrontation in class C, "I was just trying to get points...It wasn't a conflict of wills." They will sometimes avoid confrontation to save themselves trouble. In class B, BK, who was a low participator, was asked how he felt about being called on, and replied "I knew that was coming; sometimes I don't mind being called on, but if it's something where I don't like the question I get antagonistic and answer a different question." The class laughed, and Mr. B asked him if he ever got antagonistic in that class, but BK said he didn't. In Class D, where hostility is likely to be met with scorn, there are no students in cluster 6. It seems that it takes enough involvement to dare to rebel in there that enactment is also likely to be part of that involvement, and all the rebellious people are in cluster 5. The kind of lack of involvement and need for indifference which we're discussing is seen on the final evaluation, where this group says significantly more than the others that the teacher was too much of a person, implying that he should have been more impersonal and role-oriented.

Partly due to the need to maintain an indifferent front, this group's contentiousness often takes the form of wisecracks or arguments over trivial or non-intellectual issues such as grades and length of papers. Probably the most direct examples we have of wise comments come to us on the evaluation form, where this group continually makes fun of them. There are many examples but one is DB, who says in 10 years he expects to be "still filling out forms", and under "further metaphors" writes "The old Chinese proverb, 'The longer the spoke, the greater the tire' applies to course evaluations as well as speakers". This kind of comment could be compared to a complaint by EL of cluster 5, who writes a long paragraph on his form about what was wrong with ~~cluster~~ 5 and how it could have been improved. An example of how the group can pick up trivial points is seen early in the first session of Class C when MK says, "I take it we're not going to use the textbook" and "Would it behoove us to take it back to the bookstore then?" Another is when DB, in a discussion of a movie about the concentration camp says, "Why do they pick movies with such rotten photography?" and on his final evaluation remarks that they were "absolutely the worst done piece of work I have ever seen including home movies." (This same DB, however, on his follow-up, said that the movie made a deep impression on him. This is a good example of the fact that the particular indifferent contentiousness of this group is hiding important concerns they have). There are many times when this group argues about plans for grading or asks about dates for tests or points out that tests and papers are on the same day or asks if they do a research project will they still have to take the whole exam, etc. These are all ways to upset these teachers, who usually feel somewhat guilty about grading, and also ways to profess indifference to other than the extrinsic rewards of the class.

This cluster does not feel the need to win arguments, or at least to refuse to be defeated, which is true of cluster 5. Therefore, they do not necessarily wait until they have a great deal of backing for their points when they argue with the teacher or with other students. While the 5's are likely to have read something which the teacher isn't acquainted with, the 6's are likely to have neglected to read the assignment they are arguing about. In interaction which illustrates this, and also a typical denying kind of contentiousness on the part of this cluster is as follows:

WI: Are you sure this Oedipal thing is so extensive?

Mr. C: That is an issue we're going to discuss.

WI: Cause I don't believe it.

Mr. C: You don't have and never had any feelings toward your mother?

WI: No, or father either.

Mr. C: (talks about how it is not the same for everybody, that everybody repressed it, and says that some people must massively repress it.)

WI: Wouldn't the relation between the parents have something to do with it?

Mr. C: Yes, and the siblings too.

Mr. C: (Again, talks for a while, says that when a kid can't take it and massively represses it, you'll find that neuroseis, sexual problems, hand-washing compulsions, etc. may develop.)

WI: Will we have some readings on this?

Mr. C: Yes, do you want them?

WI: Yes, we haven't had any.

Mr. C: (Says yes they have, and tell what it was).

WI: But we haven't had any experiments.

Mr. C: Have you read __________ ?

WI: Yes.

Mr. C: _______________ article in it?

WI: No.

At this point the class laughs and it's quite clear that Mr. C has won. This interaction also illustrates that teachers can become fairly angry with these students, for they are troublesome and it often seems that there is no particular reason why they are arguing except to be troublesome. They also seem to attack when the teacher is in a vulnerable position, as opposed to the cluster 5 people who are more likely to attack when he is strong. In these ways this cluster is very threatening. But the fact that their attacks are not as meaningful as those of cluster 5, and are not persued with as much vigor means that the 5 attacks are in a way even more threatening. The teacher can feel some satisfaction after having defeated a 6 in an argument even if it was not an important argument. But even if a 5 gave him a new insight into a problem while defeating him in an argument, it may be hard to take.

Part of the reason why the members of cluster 6 seem to be content to make futile gestures of rebellion is that they don't seem to believe that a rebellion has any possibilities for success, and don't really know what they would want to happen as a result of such a success. In Class B, for example, after the teacher had made an innovation which allowed the students to discuss more, and had them put their chairs in a circle, FA looked around, and said, "I don't like it," and didn't participate any more that day. And generally this group didn't feel comfortable in the position of discussion leaders. FA said that he was displeased at this failure of the other students to respond to his arguments when he was heading the discussion, and JS said she wouldn't be a discussion leader because it would mean being too much on the defensive, and she liked being on the offensive.

The feeling of this group that authorities are bad and should be harassed and argued with is an ambivalent feeling, and the other side of the ambivalence is a desire that the authorities be even more powerful than they are. This seems to some extent to be derived from family situations of these students. Whereas the fathers of cluster 5 were described as too authoritative, or else as often absent, there is some tendency of cluster 6 people to describe their fathers as weak, as less dominant than their mothers or as unable to control their children as they ought to. This concern with wanting to be controlled by an authoritative figure can be seen in the interviews and the class as well. DB, for example, says that as a father he is planning to be conservative and traditional, using moderate to strong discripline. PS has a father who's a doctor and a grandfather who's a minister, and he is planning to be a medical missionary. In class, he answers T's question of "What are some advantages of punishment" after a silence by the rest of the class, with "Sometimes you don't know what's good for you."

This cluster does not seem to have the high level of basic self-esteem which we found in cluster 5. The adjectives they use to describe themselves are often rather sad. MK says he would like to be "at peace with the world" but is "discontented, happy, sad, lonely, groping". BK describes herself as "unmotivated, undisrupted, wishing to make friends yet unreasonable 'closed'", and PS would like to be "responsible, considerate, honest, Christian-like, and unhypocritical", but feels that he is "quiet, withdrawn, hypocritical, worrisome, proud."

The females in this group, 3 of the 11 members, have some concerns which are particular to their sex. They seem to have difficulty in combining and appreciating both the feminine and masculine aspects of themselves. They tend to have been brought up in intellectual homes where intellectual work was encouraged and they have come to value some masculine ideals connected with thinking hard intellectually and by being interested in careers. But they seem to feel that they are not complete women and that this is somehow connected to the above interests. They describe themselves as "unattractive" or "shoddy", and in the class seem to feel that the teacher is unlikely to consider them attractive persons, and so they might as well give up the possibility of being womanly in relation to the teacher and concentrate on their more masculine abilities. JS, for example, was upset when Mr. B, in seeing her on the street, pointed his finger at her and said "Bang". She asked him to explain it at the next class meeting, and he said that he sometimes felt some hostility toward the class. Given that she felt some attraction for him, or desire to be appreciated and liked as a woman, which seemed to be true in her case (when he said once in class that he almost slipped and said "psychiatrist under every bed," she said "Well!" in a provocative way) this must have hurt her feelings. Two of these females mention that they are attracted to the observer or the lecturer , who may serve as more distant and unattainable objects who can't reject them. This kind of insecurity is their femininity in relation to the teacher leads these females to hostility toward him, and their hopelessness about the potentialities of the relationship to be very complete tends to make their hostility the less invested kind which doesn't include much enactment which is typical of cluster 6.

Cluster 6 seems both less realistic and less optimistic about the possibility of resolution of their problems in the future than does Cluster 5. Part of their unrealism seems to be a protestation of indifference such as we saw in their trivial argument, but part of this seems also to stem from real doubts about how they might go about finding a future which they can be comfortable with. They imply that they would be dissatisfied with all but magical solutions. Thus FA says that in ten years he expects to be settled in some career, a stable life pattern, having made my compromise with society." He would like to be "an experienced world traveller, a writer, as free and open-minded as I feel I am now." And BK, who said he expected to be "still filling out forms", would like to be "marooned on a TV equipped South Sea island." A final note of pessimism with respect to the conflict with authorities is struck by WI. He says that with his teacher as the father of a teenager, "There would be a diversity of wills. Both would be pretty stubborn.... There would be more conflict than in most homes. He's stubborn. Both would think they're right. Sometimes the father would worry, sometimes the son. There would be no real victory or defeat, the conflict would linger." It seems that resolution would be difficult for the cluster for the only alternative they seem to be able to see to giving in to authorities or society and in the process losing their integrity or individuality is a constant defensive attack on that society. Their form of indifference handicaps them in the search for their own creative ideas which might help them find a happy medium between selling out and attacking.

Cluster 7

Factors:	HI:	Exhibition	.01
		Concealment	.05
Categories:	HI:	MT	.01
		SE	.01

The most striking thing about this group is that they like to talk. Their lowest participating member of 6 females and 5 males, is 14th in participation and the average is a good deal higher. They do not seem to need to be very involved in the class or in the issues under discussion in order to talk about them. It is their habit to add to whatever discussion they might be watching. As LI said, "I talk a lot, it's not that I think it's any more important than what other people have to say, it's just that I'm egocentric." Their threshhold where they decide something is worth saying is just the opposite of the low participators. They are ready with an answer to almost every question, or with questions of their own or new things they would like to discuss, and they tend to volunteer more than once to be discussion leaders; generally, they just enjoy talking, and it usually turns out that the teacher ends up limiting their participation more than they do.

They are not a group of low intelligence, but their participation lacks some depth of thought and involvement partly because of its sheer volume. They do not themselves tend to be fascinated with the process of working with and creating ideas. They tend to think of the class as better if it involves a lesser amount of work on their part. On their final evaluation they are significantly high on the item "The teacher assigned a great deal of reading", and FW says in her follow up, "After about the first two days I wanted to transfer to a different section. He was going to demand a great deal of work." Their feeling about work outside of class is not too different from their process of thought in class. They are likely to make comments which are not at all well thought out, and even their contentiousness, which there is a fair amount of, has this quality of superficiality and unwillingness to think too hard about the matter. Thus MA says in class about Freud, "He broke down the complexity of the person into id, ego, and superego and of course I don't believe it."

One concomitant of this lack of depth in intellectual activity is that this group tends to see everything in very personalized terms. They relate to the teacher as a person to the extent that they cannot become involved in the intellectual issues which he is discussing. They are worried about what he thinks of them, they are trying to impress him, or they're playing interpersonal games with him like interpreting his motives in psychological jargon. They make outside contacts with him like coming up after class with further questions or requests for special favors. Some of them feel very involved with the person of the teacher, as with some of the girls with crushes on him, or one male especially who tried to confide some very important matters to his teacher, was rebuffed and became contentious and made a lot of jokes for the rest of the term. But for many, while the personally oriented relationship with the teacher is the bulk of their involvement with the class, this involvement is not especially strong relative to that in their other classes.

Joking or game-playing seems to be an important defense for the group. They want to deny things which they don't like and if they are frightened or hurt they will either deny the offending fact outright or make a joke about it. Thus AG says he won't accept the assumption the teacher is making that individuals are determined by the environment, and MA says that it wasn't fair of Milgrom (who found that people would give other people what they thought were dangerous electric shocks for a great many trials) to stay where he did, that he should have kept going and give the people a chance to think about what they were doing and then they might have refused.

There is a range of people in this cluster which extends from the more female part of exhibition to the category of Moving Toward, the more male, self esteem which is involved with showing off, bragging and contending. At one end of the continuum, we find 2 girls who participate somewhat less than the others and are not as physically attractive as the others. They are involved with crushes on the teacher, and their acts in class tend to be very dependent and very moving toward. They are afraid of rejection by the teacher and so their moving toward tends to be rather shy and tentative and fearful. A little further over on the continuum we find some attractive girls who do not feel as involved with the teacher as the first ones, but who are able to become closer to the teacher. They seem to play the part of imperious daughters who are indulged by their fathers, and who can dare to challenge him more than perhaps any other students in the class because they know they can beguile their way out of any trouble they might get in. They are supportive and moving toward in the sense of being flirtatious with the teacher, but they also have arguments with him in which the teacher is often playing the part of wise man of the world to a naive young girl and the girl is getting exasperated with him and saying, "Yes, yes, I know that but..." All these girls are very much feminine in their relation to the teacher. They are willing to act helpless so that the teacher seems strong, and are likely to bring up examples about traditional feminine spheres such as child-raising or housekeeping. They will protest in defense of children in a feminine way as when MS, in relation to a proposed way of treating children in a utopian society, said, "But doesn't a child need cuddling?"

From these females, who are somewhat contentious but in a feminine and flirtatious way, we move to the more male side of this cluster. The males tend to be more exhibitionistic in the sense of bragging or showing off. Some of them do a lot of joking with their bragging, some are quite contentious, and others just talk a lot, without any particular emotions being expressed other than pleasure in their own talking and moving toward the teacher through their talking.

One factor in the backgrounds of these people which seems important is that they tend to be unusually attractive physically, and one would expect that they also were attractive children. People probably tended to react to their appearance more than to their personalities or intellectual capabilities. They were the cute little kids who learned to play games and do tricks so that people would laugh at them and reward them, and who found that they were able to get their way by using their physical charms and learning to be beguiling as well. This kind of importance placed on their appearance seems to have made it less likely that they would be able to become introspective, to concentrate on aspects of themselves or other people or ideas beyond appearances.

The teachers in these classes seem to appreciate the contributions of these students, especially the females and especially near the beginning of the class. The females are particularly adept at making the teacher feel powerful and attractive, and he can use this kind of support early in the class. Some examples of teacher responses early in the term are as follows: from Mr. C, while calling the role, to JT, "That's a good way to get to know your name is to meet you in a restaurant; from Mr. A to SS after a cluster 5 person has just made a fairly hostile and elaborate comment, "Sue, do you have any response to that?"; and from Mr. D, to FW who hesitates in making a point, "It's all right, don't be afraid." The contributions of the males are also appreciated more in the beginning of the term, at this time the teacher is often having a difficult time keeping any discussions going because of the fears or resistances of the class. It's nice for him to know that there will usually be a cluster 7 male with his hand up, ready to say something in answer to his appeals and not very likely to say anything very threatening or rebellious. But as the term proceeds and other clusters begin to be able to work, the teacher does not need this cluster as much, and will cut down their participation by calling on other people. The cluster is content to take a major part of the best periods of enactment by the students, for they are not capable of the depth of involvement or thought or creativeity which some of the other groups can attain.

FOOTNOTES

1. The instruments used in this study of the students were as follows:
    (1) One interview with each student during the term.
    (2) An interpersonal Outcome Inventory, administered before and after the course. The objects were rather, mother, teacher, likeability of situation, how often will the situation occur in this course, and how often did it occur. There was a nine-point scale varying from frequently to never. There were various situations described.
    (3) A tri-weekly questionnaire, which included a semantic differential with the following objects: father, mother, persons in authority, teacher I can learn from, average college teacher, ideal student, myself as a student, psychology 101, myself

in a course I really enjoy. There were also various statements to put in rank order on this statement. They related to psychological theories.

(4) Student Course Evaluations, administered at the end of the term; this included some general evaluative statements, a metaphor check list, and other statements designed to correspond to the teacher-as categories to which the students answered from "almost always" to "almost never" on a five-point scale. This measure also included a semantic differential with objects: teacher I can learn from best, average college teacher, my psychology teacher.

(5) A follow-up study, with some open-ended questions, and some quantified ones.

Whenever comparisons could be made on items or scales, a one-way analysis of variance was done. When we mention that something was significant for a cluster in this chapter, we mean that there were significant differences on the item or scale, and that this particular cluster was the highest or lowest on it.

2. The significance tests for the categories and the factors by cluster were done in a different way. This time the scores for each cluster were tested for significance against the combined scores of all the others. The only levels of significance which we checked were .05 and .01. The numbers before each cluster by the categories and factors indicated whether p was less than .05 or .01.

All these instruments are available at the project office.

The Teacher-As Typology: A Conceptualization of Student-Teacher Task Strategies

If one looks hard at classroom discussion and interaction, or if one listens to teachers discussing their goals, their gratifications and frustrations, as well as their continuous attempts to achieve some sense of balance or fit between how they see themselves and their teaching styles, one soon senses that the task confronting teachers and students is not a unitary one at all. Rather, the college classroom and the teaching-learning transaction creates for all its participants a number of quite diverse task pressures.

It is our purpose in this chapter to begin a functional analysis of these different task pressures and to describe their manifestations in the classroom. Our aim is to introduce the multiple goals teachers can strive for and to clarify some of the task strategies which teachers may use in order to achieve these goals. Teachers have their own goals and some conception of the task strategies which are most effective in achieving these goals, either on a long term basis or in the immediate classroom situation. Students in turn may have some quite different goals in mind, as well as some very different notions about what strategies are most preferred; thus students may respond in very different ways to a teacher's particular task orientation. With this in mind we shall also be discussing some of the pressures and counterpressures which teachers and students exert on each other in their multifaceted relationship.

This functional analysis could be carried out in a number of ways, but our preference is to begin with the teacher. Underlying our analysis is a set of interrelated assumptions which can be stated explicitly. We have assumed that most teachers do have several educational, or growth, goals and objectives in mind, that these aims arise from a variety of internal or personal as well as external or immediate situational sources, that efforts to implement these goals generate continuously changing and diverse task pressures for the ongoing teaching-learning transaction, and that there are a number of distinct, yet related, task strategies which teachers can adopt in order to implement their goals and in order to handle the task pressures.

This brings us to the central question to which this chapter is addressed: namely, what are the different ways in which teachers can connect with the class as a whole, with subgroups of the class, or with individual students? We shall attempt to deal with this question by presenting our conceptual scheme. It is our contention that the total teacher performance and teacher-student task interaction can be understood by distinguishing at least six different teaching strategies. This we have called the Teacher-As typology.[1] The terms we have evolved as labels for the six Teacher-As strategies follow.

First, and most obviously, it is meaningful to talk about aspects of classroom interaction in which the teacher serves as an *expert*. In addition, we can identify particular moments when the students view the teacher as one who is functioning in the capacity of the *formal authority* within the group. Other aspects of his performance become clear if one is aware that the teacher may be acting as *socializing agent*, or a *facilitator*, or as an *ego-ideal*. Finally, there are aspects of the teacher's total interaction with his students that do not yield to analysis unless one recognizes that he is functioning as any individual must in a human relationship, as a person, albeit a person existing in a rather special colleagueal role relationship.

Although this point will be made many times again, it is important to note at the outset that the Teacher-As typology is not viewed as a set of separate, mutually exclusive functions or strategies. On the contrary, we are ultimately interested in isolating strategies which are often performed simultaneously within the same classroom period within the same one or two minute burst of interaction or even within the same act. In our view, what makes the teacher's task so extraordinarily complex and difficult is his need to deal with the delicate interplay between and within strategies and to achieve some sense of balance in his total relationship with his students. In the first part of this chapter we shall describe, and examine rather closely each of the six aspects of the Teacher-As typology. Once this overly segmental view is behind us, we shall proceed to illustrate the complex and subtle combinations of pressures and counterpressures students and teachers exert on each other within and across the six strategies by presenting a detailed analysis, in Teacher-As terms, of a transcript of a session from one of our four classes.

Although we shall anchor this functional analysis by referring to the several aspects of the teachers' performance, it is our intention to show not only how the different strategies are worked out in terms of the teachers' aims and goals, but also to explicate how the students' task expectations and orientations toward the teacher may be viewed in a parallel fashion. In a sense we are suggesting the possibility of a complementary Student-As typology.

Each aspect of the teacher's total performance is, in our view, intimately tied up with observable pressures upon the teacher and students. These pressures arise from many sources including the teacher's own standards of excellence, values and expectations not only for his students, but for his own performance, his conception of the educational process and aims, the demand of the formal structure in which the classroom is embedded, the influence of particular colleagueal relationships and the informal groups the teacher is a member of and uses as a referent, his own needs for growth and change, and the particular array of students in the classroom, their needs, expectations and changing demands over time. In Chapter 8, we have tried to arrive at a conception of what constitutes work, by looking at what each of the six Teacher-As strategies can mean to different teachers, and to different clusters of students, at changing phases in the development of the class as a group.

By analyzing the transcript of session 19 from Mr. C's class and pinpointing some of the subtle complexities of teacher-student task interaction, we hope to accomplish several purposes. First and foremost we hope to be able to justify our contention that a host of goals and strategies, which go beyond just the transmission of knowledge and technology, are not only a legitimate, but are even a necessary part of the teaching-learning enterprise. In one sense, we are encouraging college teachers to explore and legitimize new horizons for themselves which may appear within any or all of the six strategies. We also hope to establish that the use of the Teacher-As typology can be helpful to teachers as a means of carrying on a continuous self-evaluation and self-development process.

We have posited that the observable teacher-student task interaction in the classroom can be viewed as a composite of six conceptually distinct forms of interaction. We wish now to examine each of these separate functions and to determine the goals, some of the prototypic behaviors and the sources of available energy and motivation which characterize each aspect of the entire task. Let us begin by introducing the teacher as an expert.

The Six Teaching Strategies

The Teacher As Expert (X)[2]

Looked at from one perspective, the teacher is connected to the students in his classroom because to some extent and in some form or other he stands before them as an expert, or he is capable ot adopting an expert strategy. The teacher is the most immediate representative of the dominant university culture which usually rewards and values a detached, objective, and rational mode in making sense of data, experience, and the world. The teacher-student relationship is predominantly characterized by an unidirectional flow in that the teacher, accredited as a possessor of a body of reasoned knowledge or a technology, is charged with the responsibility of transmitting his accumulated expertise, wisdom and experience to a group of students who are seeking some kind of understanding and expect to be accredited for their efforts.

Guiding the expert's activity is his goal of transmitting whatever findings, concepts, analytic perspectives, or critical viewpoints he wishes his students to acquire in the course. His relevance for that situation at the moment flows directly from the fact that he knows a great deal more about a particular area of his discipline than do his students. Consequently, the teacher is regarded as the primary locus of relevant information and resources; either these are located in his head, in his lecture notes, or in his textbook, and he is the obvious person to familiarize students with other respected experts in the field. In addition, the teacher as expert is usually expected to share his assimilated knowledge in the form of a logical, coherent, and comprehensive lecture. Whether his expertise is displayed by means of a lecture, by quoting or referring to authoritative sources, by means of raising or answering pertinent and challenging questions, or by the act of correcting or validating what a student has said, his energy is primarily devoted to having his students achieve one or more educational objectives in the cognitive domain. The teacher as expert would probably feel comfortable with and would probably be in agreement with many of the cognitive objectives suggested by Bloom and his associates (1956) in their taxonomy.

Faced with an expert strategy, what are some of the constraints and expectations which are imposed on and experienced by the student? Defined as a novice, he is expected to travel down the teacher's road to truth. In the extreme, he may be likened to an empty dead vessel which is to be fueled with life-giving knowledge. In a large lecture hall or in a smaller discussion group, the student relates to the teacher primarily by taking notes, raising questions, discussing relevant readings or just listening attentively. His activities are not necessarily passive and accepting. Among other things, he is very capable of testing out some thought, idea, or hypothesis with the teacher, he may ask for a halt in the proceedings in order to check whether he has understood the points the teacher was trying to make, he may ask highly specific or technical questions, he may state his reasons for disagreeing with the teacher's position, or he may indicate his uncertainty or discouragement with respect to whether he has grasped the material.

When the process goes smoothly there are several positive shared outcomes which should be mentioned. Consistent with the teacher's cognitive objectives, evidence of the acquisition and retention of considerable information, a deeper and more thoughtful perspective on the critical issues or questions in the field or some sustained curiosity about the subject matter are viewed favorably and are rewarded. However, the process does not always flow so smoothly, and certain undesirable outcomes, such as a failure to absorb information, resistance to particular kinds of information, passive mindless rote learning, or a devaluing of the teacher's expertise or the usefulness and credibility of his field, are usually frowned upon and can be quite disturbing to the teacher as expert.

Having specified some of the kinds of goals and activities which can characterize this aspect of the total task, it might be useful to note some of the satisfactions and motives which propel and sustain these activities, as well as contribute to a particular set of outcomes. Perhaps the core of the matter is best approached by way of the concept of competence. For the teacher the issue of competence usually centers around his ability to comprehend and organize the relevant intellectual material in his area of interest and his capacity to present this material clearly, logically, and convincingly. Questions about the teacher's ability to remain well informed on new developments in his area, as well as his ability to make creative and critical judgments concerning the main trends in his field, bear directly upon the teacher's sense of competence as an expert.

A teacher's sense of competence may be threatened and challenged in a number of ways. Which of us has not experienced that sense of dread as we notice the hand up in the air; the hand of that student in the back row who every once in a while comes up with questions which are so tricky that we breathe a sigh of relief under our breaths as soon as the sequence of interaction is over? In addition, no teacher can indefinitely reveal his ignorance or his lack of preparation without sensing the class' amusement or annoyance and without experiencing considerable shame and discomfort. Or, what about the situation where one must acknowledge those frightening words "I don't know the answer to that" even when our ignorance is perfectly justified? Or consider the sense of uneasiness when there is no response from the one or two very bright students in the class to a lecture that took hours to prepare and organize? Or what about those students whose exams reveal very little understanding or learning when all along you had been under the impression that they were grasping most of the material? These instances all address themselves explicitly to the issue of a teacher's sense of competence. The issue can frequently emerge indirectly. For example, a teacher's concern about his own competence may lead him to develop a sense of mistrust about the level of competence of his students and to use this as a means of justifying his own rather mediocre and unchallenging performance, consequently protecting himself from his doubts about himself.

From the students' perspective the issue of competence is no less relevant. One may also wish to refer to the student's curiosity or to his intrinsic love of knowledge, or one may focus on the student's need to achieve which in this case would center around his concern for meeting his own internal standards of excellence with respect to the mastery of the relevant intellectual material. However, it is important to remember that this and each other aspect of the total task are sustained not only by positive or approach motivation but by negative or avoidance motivation as well. One need only think back to the experience of sitting in a lecture hall listening to words whose meaning seemed totally beyond one's grasp to know that the fear of appearing stupid to others and to onself makes its contribution to the learning situation. Not only are the students pursuing the goal of confidence and greater knowledge; they are seeking to avoid most of the potential disasters inherent in the process of education. They may confront the realization that they are in over their heads, that certain kinds of expertise cannot be acquired with a reasonable expenditure of time and effort, or the feeling of being overwhelmed, incompetent or inexperienced in relation to the teacher's skills and intellectual capacities, or the fear of failure and the fear of having the teacher demolish an answer to a question, or the anticipation of being shamed in front of the whole class, or the sense of distress experienced as the teacher lectures on disturbing material or asks discomforting questions. All of these and many other motives can disrupt the best conceived plans of the teacher as expert and of his students.

As we shall see in the second part of this chapter, concerns about expertise on the part of both teachers and students are frequently not unrelated to the issues raised by the teacher's functioning as a formal authority.

The Teacher As Formal Authority (FA)

The second task strategy is defined by a series of activities and functions in which the teacher serves in the capacity of a formal authority. The pressures on the teacher to function as a formal authority arise from several sources. Viewed from the perspective of the larger social structure within which the college classroom is located, the teacher is an agent not only of instruction, but also of control and evaluation. He is responsible to a group of frequently unknown administrators and external agents who expect him to insure uniformity of standards and a justifiable evaluation system based on merit when he presents his set of grades at the end of the course. Future employers, draft boards, graduate schools, scholarship committees and Deans' offices all convey some need for a meaningful and averageable estimate of a student's performance. In addition, teachers are expected to cooperate with university officials in seeking student compliance with the university's rules, regulations and standards of decorum, so that neither the administration nor the university is publicly embarrassed. The chaos which is anticipated if a pass-fail or non-graded system were instituted reflects the amount of commitment the formal system has to a merit-oriented grading system. Consequently, most teachers enter the classroom with their power clearly established and institutionalized, whether they like it or not.

Functioning as a formal authority may involve the teacher in the setting of clearly defined standards of excellence, goals, and deadlines for assignments, as well all those instances of moment-to-moment control over classroom procedure and decorum. The teacher's influence in this area is derived ultimately from his power to banish the student from the classroom in the interest of maintaining an environment in which other students can learn or in the long run, from the teacher's capacity to be punitive in his grading and examining practices. While this ultimate power might never be invoked, the fact remains that in most classrooms it is typically within the teacher's domain to define what is relevant for class discussion, whether an issue should be raised after class, in private, who shall speak in class, and what kinds of behavior are unacceptably disruptive. It follows then that we would include within the set of activities initiated by students within this definition of the task not only the familiar requests for clarity regarding assignments and grades but also those activities which address the issue of the teacher's control over the classroom interaction. Thus the basic aims of the formal authority strategy are the integration of the student into the norms of the larger formal system, the enforcement of these norms and the provision of a classroom structure and clearly defined expectations designed to insure a minimum of disruptive activities.

There are additional pressures on teachers to function as formal authorities. Consider those instances where the teacher is expected to prevent one class from disrupting another and one student may not be allowed to disrupt the learning activities of another. The need to avoid disruptive activities and to insure that he is not losing control over the class can become paramount for some teachers. The establishment of a viable and mutually acceptable normative structure tends also to be a critical building block for the teachers' functioning as an expert. This is especially true when students respond to the teacher as a formal authority when he sees himself as having adopted the expert strategy. Students who feel their autonomy or independence needs threatened by what they regard as a restrictive formal authority may latch on to the teacher's efforts to function as an expert and respond ostensibly to his expertise with challenges, resistance, harassment, or other more indirect and passive forms of retaliation. This obviously makes it very difficult for the teacher to function as an effective expert, as is evident in session 19 of Mr. C's class.

Some teachers view the power inherent in their functioning as a formal authority as a necessary deterrent to student self-deception regarding his ability or performance, while in other cases it is seen as the ultimate weapon against presumed inherent student laziness, passivity or slothfulness. Other teachers mistrust students, are convinced of their irresponsibility, and are fearful that they will get out of control, act out and turn the classroom into a "blackboard jungle". Some of this kind of scorn arises from teachers' real and often disturbing experiences with students who hound and browbeat them for either good grades or to have their grades changed. In more charitable moments teachers may refer to the students as being "extrinsically motivated", while in more harassed moments or in private they referred to them as "grade grubbers".

The scorning of over conforming, anxious-dependent students who are excessively preoccupied with rules or with maintaining a sense of security with respect to the evaluative component of the course is one stance which teachers can adopt. Other teachers tend to be very disturbed by what they view as the disruptive anxiety which is generated by their grades and evaluative procedures. Consequently, they may abdicate functioning as a formal authority by refusing to clarify expectations or grading procedures, or they may propose some procedural change such as giving everyone an A or B or falling back on self-grading, which presumably eliminates the issue.

However, it may be in the students' interests to know what the teacher expects, to have a clear sense of what the demands and limits of the course are, to find out what the teacher will reward, to function in a relatively non-disruptive learning environment and to be assured that rewards for excellence will at least be as uniform and objectively based as possible. Students may indicate their acceptance of this control by requesting permission to speak, by calling for a clear and unambiguous statement of requirements, by complaining about the irrelevance of other students' digressions or by efforts during office hours to have the teacher control a particularly annoying fellow class member. But there are additional forces which may propel students to want a teacher to function as a formal authority, and in the process they do ascribe legitimacy and power to him.

These forces vary considerably from student to student. When, for whatever reason, the student has little energy available for a particular course, having a teacher specify clearly what is expected often seems far preferable to having a teacher create an open-ended situation in which the student feels guilty for anything less than total absorption in the course; here the level of ambiguity about expectations can be especially difficult to handle. Even students who will eventually find other sources of motivation sometimes find it useful to focus initially upon the teacher's demands and standards. To emphasize that there are other motives than the need to reduce uncertainty which underlie the students' involvement with the teacher as formal authority is not to deny the relevance of needs for structure or other needs among college students. There are students who are very content to adopt a passive, dependent, and conforming stance vis-a-vis the teacher as formal authority. Nor would we deny that there are students who stubbornly cling to the notion that the teacher's evaluations constitute the sole criterion of success or failure. We also would not want to underplay the importance for rebellious, counter-dependent males of confronting a male teacher who is perceived by them to be a potent male who is to be challenged, and against whom they may test themselves out. Our intention in the above discussion has been simply to indicate that there are many forces behind such student activities as calling for clarification of what is expected, attempting to anticipate what will be on the final exam, casting the teacher in the role of the final arbiter of what is acceptable classroom behavior, challenging the teacher's authority and power, and using the teacher as a clearing-house and guide in an unwieldly discussion, the direction of which may be unclear.

In addition to serving as a representative of the formal institutional structure and as the most visible definer of expectations and normative behavior in the classroom, the teacher is also a member of a particular field on discipline in which he has a great deal invested and into which he is interested in recruiting new members. This brings us to the teacher as a socializing agent.

The Teacher As Socializing Agent (SA)

An understanding of the teacher as socializing agent requires a consideration of two things about the context in which higher education takes place. First, not only is the teacher in possession of certain intellectual information and is he responsible for providing a structure within which he can share his knowledge, but he is also a member of various overlapping collectivities with respect to which the students are either outsiders or marginal members. Furthermore, the goals towards which the students are striving typically extend in time far beyond the particular classroom and a particular course. The teacher is a member of the community of scholars, as accredited by a particular professional and academic discpline, and he is, as well, a member of an institution which may be highly relevant to the occupational aspirations of a given student. The teacher resembles in some sense the gatekeeper to a vocational world. He serves as a potential representative of his field, as well as a vehicle for sharing the values, assumptions and style of intellectual life which characterizes his discipline. Frequently, it is he who does or does not pass the individual student along to the next plateau or screening process, with varying degrees of support and pleasure. It is soon apparent to students that acceptability within the standards of the discipline or even within the standards of the community of intellectuals involves more than the ability to master the intellectual material and teachers can be rich sources of data for the student in his efforts to test out a series of vocational identities. In a very real sense a college teacher can serve as a recruitment officer for his field and his functions tend to include the identification of bright exciting prospects, the selection of the most likely candidates via a continuous process of selective encouragement and discouragement and the provision of a form of preprofessional training and experience which equips the student apprentice so that he can tackle the next set of hurdles or initiation rites.

To the extent that undergraduate programs are adapted to this aspect of higher education, they tend to become highly 'pre-professional'. The student is encouraged to take courses which would be useful to him in graduate school. He is engaged in discussions of the underlying commitment to science or humanism or beauty which seems to the teacher to be a necessary condition for acceptance into training programs at a higher level. But we should not overlook the socializing activities of the teacher whose relevant reference group is the more broadly defined community of scholars. While a particular teacher may shun the more explicit forms of creating "little graduate students", he may feel very strongly about the extent to which the university is an appropriate place only for those who share his political or social values as well as some broader notions about life or what the process of education is all about.

From the student's perspective, the potential letter of recommendation may be a more salient reward to be obtained from the teacher than a good grade in that one course. Some students declare that they would like to get into the inner circle inhabited by the teacher, however broadly or narrowly defined. Many students seem to want to test out whether they could get in, or whether it would be satisfying if they attempted to move in that direction. For understandable reasons students have mixed emotions about the fact that the teacher controls access to further training and membership in "the elect". They may also learn very quickly that the journey to the inner circle may be a long and arduous one and that for a considerable period there may be some who will refuse him entry. Even a new Ph.D. must wait for acceptance from senior faculty. This refusal frequently rests on the assumption that entry is contingent on acquiring more than some narrow expertise in an area or the superficial goals or trappings of the community. Frequently, the focus is on some mystical set of values or intellectual style, which like a bottle of quality wine, requires time and aging as well as the correct proportion and blending of ingredients.

Still, some students may seize eagerly upon any opportunity to join with the faculty member as junior members of the circle while others may resist any attempt on the teacher's part to ensnare them into the professional pathway. In either case they are contending with the issue of the teacher as socializing agent.

Students also make their contribution to the establishment of this aspect of the total task. For many there are features of the intellectual community or of the activities of a particular specialty per se which are attractive. For some students, to begin to imagine their future in terms of a particular occupational goal is to crystallize their still developing interests and passions; for others, it makes concrete and reachable a future that assures them of the necessities and pleasures of life as they see them. And then there are students who are motivated primarily by their alienation from or rejection of the life style associated with their parents, their community, or their peers, and who will at least temporarily latch on to a socializing agent in order to test out the possibilities for a meaningful future commitment.

Thus, a teacher and his students may in various ways be bound together within the socializing relationship. For the student to try on the discipline or profession which the teacher represents may involve him in the acquisition of sacred artifacts or the awkward mimicry of an accepted intellectual pose or pretentious vocabulary. Fortunately for him most teachers overlook these ungainly beginnings. A faculty member may remark to a colleague that such and such a bright undergraduate seems to be "coming into the field", although he may feel constrained to conceal his sense of pleasure at the implication that his field has proved capable of attracting yet another valuable recruit, or to reveal the extent to which he obtains gratification from the process of socializing the next generation.

How does the teacher as a socializing agent or gatekeeper typically function in the classroom? Keeping in mind that we have been describing a process of acculturation in which new norms, values, or even a new style of making sense of the world are being transferred, internalized or synthesized with the old, let us focus on the classroom process. Here we would include brief lectures or anecdotes which convey to the student the range of positions members of his field take on different issues, why they line up the way they do, some sense of his own positions, and the process by which he arrived there, as well as some statements which conveys his research interests and intellectual style . For example, a psychologist might become immersed in a discussion of the relative merits of the more hard-nosed experimental tradition as opposed to the more "soft-nosed" humanistic or naturalistic approaches to relevant problems in the field, or he may share his unique historical perspective on the field by commenting that Piaget is to psychology now what Freud was fifty years ago.

In addition to describing the different kinds of worlds members of his discpline live and work in, and what he considers to be valuable, meaningful and important in his field, a teacher is often drawn into or initiates discussions of how one goes about entering the "inner circle"; that is, how one applies, what programs are good and where, what admission requirements are like, what future courses would be relevant and so forth. In these instances, the teacher may be providing his students with a fair amount of factual information, leading one to believe that he is functioning as an expert. However, the main thrust of the teacher's effort is still in the direction of socialization. This dilemma is most evident when a teacher is involved in a close teaching situation where he is trying to shape a student's orientation or position on a particular issue by relying on data or other factual information. A case in point is contained in the transcript of session 19, where Mr. C is attempting to convey to several students his view that in evaluating the data on Negro-white differences in intelligence, it is more reasonable to make one's interpretations on the basis of the general pattern of the results of a host of different studies rather than to do so on the basis of a few selected studies.

Functioning as a socializing agent can lead to varying responses on the part of students. Teachers frequently look upon a student's decision to take further courses in the area, his vocational explorations, summer jobs, research possibilities and the like, his desire to discuss issues of interest with other members of the field, his defense of a teacher's position in class discussions, and his interest in pursuing particular topics in more depth as some evidence suggesting that a successful process of internalization is going on or has taken place. Given a certain amount of time, those students who have internalized some part of the teacher's orientation begin to derive a sense of self-esteem from the performance of mutually valued activities. This, plus the possibilities for gratifying needs for approval or inclusion, tends to lead some students to both validate or call for further socializing activities on the part of the teacher.

Less encouraging outcomes include various messages from students conveying their resistance to what they perceive to be excessive or illegitimate pressure on the teacher's part or their mistrust of his intentions. Students who seem to be encapsulating the learning situation are also cutting off any real hope of transfer with respect to their life goals and occupational aspirations.

There are a number of potential motives which would lead students to reject the teacher as a socializing agent and which may contribute to these negative outcomes. Some may cynically view the teacher as being involved in a process of collecting disciples in order to enhance his own stature. Others may express concerns about being brain-washed, are especially fearful of becoming alienated from their old relatively safe ways, or recoil from being caught in limbo between the old and the new. Still others may be wary of becoming too dependent on a socializing agent's guidelines, judgement or rewards when it is very likely that they will be left behind as the teacher recedes or moves on. Finally, there are some students whose values, goals and orientation to life may be at least temporarily set; thus, they may experience the socializing agent's proselytizing as an intrusive onslaught which must be rejected.

The goals of information transmission, evaluation and control, socialization or recruitment are a legitimate and rather traditional part of the dominant academic culture which heavily influences classroom functioning and the values of higher education. In introcuding the teacher as an ego ideal and especially as a facilitator and a person, the goals and prototypic behaviors we shall describe tend not to have the same aura of legitimacy in academic circles. We intend to argue the case that they are so deserving. Let us begin by considering the teacher as a facilitator.

The Teacher As Facilitator (F)

Teachers view the more troublesome personal and situational impediments to learning in different ways. Some look back over their own earlier successful encounters with learning blocks with a certain sense of pride and expect their students to engage in similar struggles. Others, who view the learning process primarily from the point of view of the transmission of cognitive information maintain a certain amount of distance from their students, convinced that learning difficulties are the responsibility of the student and are outside the domain of the teaching-learning relationship. Still other teachers both acknowledge the relevance of and accept some degree of responsibility for dealing with some of the nonintellectual influences on the learning process. It is the latter teacher who most frequently functions as a facilitator.

The teacher as a facilitator seems to be guided by a series of assumptions that are fairly different from some of those which underlie the teacher who functions as an expert, a formal authority and a socializing agent. The teacher as facilitator has a fair amount of trust and faith in students. The teacher as a facilitator tends to view students as being responsible, competent, able to define and carry out their own learning and growth goals, thoughtful, and capable of learning much more independently than they are usually given credit for. Frequently it is the student's data, experiences, and curiosities, their standards of excellence and their own goals which the facilitator hopes to respond to.

These assumptions often lead the teacher as facilitator to address himself to two general sources of student learning impediments. On the one hand, there is the notion that students are capable of productive intellectual effort only to the extent that such impediments as fear of failure, self-abasement in the face of authority, or discouragment and depression resulting from excessively high standards are removed, reduced or at least confronted. This leads them to invest a considerable amount of concern and energy in reducing emotional and interpersonal blocks to learning in a variety of fairly direct ways. On the other hand, the teacher as facilitator operates more like an administrator than like a counsellor, as he addresses himself to a variety of situationally-determined impediments.

Students may not be familiar with how the library system works or where to find relevant reference material. The teacher as a facilitator may guide the students through the library or prepare a handout on reference materials and where to find them. Many students would find it difficult without assistance, to gain access to the field experiences which would make their intellectual work more relevant; a facilitator might enter here. The teacher as a facilitator might aid students in their battle for ungraded or more socially relevant courses. He could structure his class on teaching in such a way that it was entirely student-centered, was based on individual student programs of study, or he could leave the decision about class structure up to his students. He might not hand out a list of assigned readings but instead prepare an extensive annotated bibliography from which students made their own decisions about what they were to read. In whatever form it takes, it is clear that the teacher as a facilitator tries to respond primarily to the student's own definition of his goals and his unique sense of himself as a learner. The student's goals may be quite divergent from the teacher's goals, but then for one person to facilitate the learning and development of another often involves a recognition of the substantial differences between individuals in terms of what they value and what they are seeking. If we were to capture the pedagogical fervor which often underlies some teachers who strongly emphasize the facilitator strategy, we would note the teacher's rejection of any effort to "impose" his answers and even his questions upon the students who need more than anything else to develop questions and answers that are relevant to their own lives. In a sense, the aims and style of the teacher as a facilitator stand in opposition to those of the expert and the formal authority. It is not uncommon for teachers to feel as if they are on a see saw; if the facilitator end goes up, the expert and formal authority sides go down and vice versa. One implication for the teacher who adapts this strategy is that he may have to give up or at least temporarily put aside some of his aims and issues which are more suitable to functioning as an expert or formal authority. For example, a brilliant and comprehensive lecture surveying some general topic may be incompatible with the students' goal of pursuing in depth the study of some problem area or issue. Or, it may not be possible for the teacher to unilaterally establish requirements, assignments, deadlines, and even grading practices, since the student's wishes and concerns must be respected as well. This does not in any way negate the fact that there are teachers who devote a great deal of time and energy to working on ways fusing or integrating these potential opposites.

In the day-to-day operation of his class, the facilitator spends a considerable amount of energy listening very hard to what students are saying and he may make efforts to clarify for others a particular student's message. The facilitator is very attentive to the processes that may impede the class' functioning. When the class or individual students are tense, anxious, depressed or hostile to the point where work and productivity is affected, he is very likely to call for a discussion of the issue by simply asking "what seems to be going on?" A facilitator who has introduced a structural innovation to his class is very likely to support efforts to keep it going.

Successful facilitation, either on the personal or situational levels, aims at some degree of liberation from learning blocks, increased creative and independent work which involves a meaningful fusion of the affective, experiential and cognitive aspects of learning, as well as the development on the part of students of a real and meaningful commitment to the fact that they are responsible for both the definition and achievement of their unique learning goals.

When facilitation as a strategy is ineffective the consequences may vary but they frequently include a generalized blocking or rigidity in the face of an anxiety-provoking teacher or other student interventions, or a denial of personal responsibility for the failure or success of the learning experience with the accompanying range of excuses to justify one's personal failure. In addition, different students enjoy varying degrees of success in utilizing the innovative structures that the teacher has made available Students who object to the teacher as a facilitator frequently communicate as well their desire that he revert to being an expert, a formal authority or even a socializing agent. What propels students here is their fear of becoming too deeply involved or of confronting more self-doubt, anger, or depression than they seem ready to handle. Some also find the responsibility for their own learning burdensome; either from the point of view of the ambiguity involved, or in response to their anticipatory guilt at not being able to reach their own unnecessarily high standards. Anxious dependent students who are most comfortable in a more highly structured and traditional lecture situation, where the expectations are clearly defined, tend to be rather unresponsive to the teacher as facilitator. For them, facilitation may be a rather unproductive indulgence which, at best, must be put up with. But the above students are not the only ones who have some problems with the teacher as facilitator.

The student, or more properly, that aspect of all students which connects with the teacher as a facilitator may be characterized as one whose personal agenda includes not only finding out more about the course material but also finding out more about himself. Thus the student asks: What am I interested in? What am I good at? What are my ideas about a particular eventor body of knowledge? Why am I in this classroom? One senses here that the student's performance in class is partly expressive, driven by a need to articulate new ideas and to develop some sense of ownership vis-a-vis the old and borrowed knowledge. Probably the most relevant words within this aspect of teaching and learning are creativity and independence. Over and over again students test out in relation to the teacher whether they can be creative, as opposed to restricted within the teacher's definition of what is appropriate, and independent, as opposed to functioning as the perfect robot. However, the path to functioning creatively and independently turns out to have snares and pitfalls which have nothing to do with the teacher. Some have to do with the inherent difficulty of the material or with the difficulty of gaining access to it and some have to do with the pre-existing limitations or immaturities of the particular learner.

There are few interpersonal dramas more intricate than the one created by a student who wishes help but only if it entails no loss of independence on his part. Hidden among the various efforts to appear supremely confident and self-reliant, the teacher may often sense that the student is trying to tell him that he is having a hard time getting started on a paper, that he suffers from recurrent perceptions of himself as stupid, or that he is far more anxious than he seems about how the teacher will receive the fruits of his labor. The teacher often feels caught in the currents between wanting to respond to the pleas and wanting to preserve whatever mutual respect has thus far developed. The point we make here is that the pressures on the teacher to perform as facilitator may begin with pressures to remove various constraints, but the situation often moves to the point where to facilitate is to assist a student over the real and imaginary barriers which block him from his goals. But here, as well, the pressures are complex. As the history of man has indicated in numerous arenas, unremitting oppression is sometimes easier to bear than conditional autonomy. Thus, many of the pressures on the teacher constitute tests either to determine what limits he places upon the students' freedom or to determine whether the teacher, despite his apparent openness, is basically patronizing or manipulating the students. Teachers do not always pass these tests, and one sometimes wonders whether any human being could pass some of the tests constructed by students. It is clear that from the perspective of the student as well as that from the teacher, it is not unusual to find intense and mixed feelings regarding the desirability of granting or achieving freedom. Let us close this section by raising the following rather intriguing question. For what kinds of students, under what conditions and at what stage in the development of the class as a group is the granting or achievement of freedom supportive of productive work? When is it not? A similar set of questions can be raised in considering the teacher as an ego ideal.

The Teacher As Ego Ideal (EI)

Thus far we have described the teacher in his capacity as expert, formal authority, socializing agent, and facilitator. We would turn now to an aspect of a teacher's total functioning which may or may not overlap with any or all of the previously discussed task strategies. We would point here to the fact that the teacher may play an essentially heroic or charismatic role in the classroom and in doing so may end up serving in the capacity of ego ideal for students.

Whereas the teacher as a socializing agent functions as a middleman or gatekeeper between his students and an attractive yet impersonal inner circle which essentially exists out there somewhere over the horizon, the main thrust of the teacher as an ego ideal is to attract students to him personally. He is potentially very attractive to students because of his power, usually evident in his intellectual strength or expertise, his originality or creative capacities, his energy, the vivacity of his personality, or because of his deep and enthusiastic commitment to and absorption in his field. Basically, the teacher as an ego ideal is presenting a model of someone who derives considerable enjoyment from his work and who is excited about and is deeply involved in his chosen field of study. The key words in thinking about the ego ideal are enthusiasm, energy, involvement and excitement. A lovely descriptive metaphor might be a multicolored bouncing ball. Frequently, students' ecstatic evaluations of teachers reflect a heavy ego ideal component. As a strategy, the ego ideal is presenting a very attractive and seductive model for identification. As a task strategy the ego ideal is rarely evident in isolation from other strategies. Thus, teachers use their charisma while functioning as an expert, a formal authority, a socializing agent and even as a facilitator.

Some teachers will accomplish this by emphasizing their expertise, and others will strive for it by emphasizing their high status within the student's chosen field. Of course, it is possible for a teacher to play the role of expert or socializing agent without becoming in any meaningful sense a part of a student's ideal. Teachers who function primarily as facilitators convey, by their devotion to an underlying educational philosophy and by their capacity to be patient and helpful, certain qualities which cause some students to also identify strongly with them. We cite this particular example because it is all too easy to associate the ego ideal with the flambouyant lecturer whose performances amount to an intellectual and interpersonal tour de force.

Viewed from a general perspective, it would seem that one very important cue to which students respond when they accept their teacher as an ego ideal is any indication that the teacher enjoys what he is doing. Not only does he evidently enjoy teaching, but he seems to find something in that situation which is personally liberating and exciting. He seems to have more than enough energy for the task at hand, more than enough self-confidence and a belief that the activity or the ideas involved are sufficiently worthwhile to care deeply about them. What this suggests is that an important aspect of being a teacher is the extent to which one's values or one's ideals are engaged. Why do some students report that the enthusiasm of a particular teacher was contagious and caused them to work unusually hard in that course? One answer might be that students and teachers alike are striving to make their lives and the activities in which they engage congruent with their developing sense of what is important and what is satisfying. The presence of a person who can so unconflictedly involve himself in a particular body of ideas or a particular kind of teaching sets in motion various responses: some students may become alienated by the teacher's exuberance, some are envious and resentful, but some find in that teacher at that moment someone with whom they can identify and who can serve for them as an ideal.

One must ask what the satisfactions are for the teacher who is functioning as an ego ideal. A possibility is that like most of us teachers have internal audiences, composed of significant others whose standards of judgment are important to them. One reason why a particular teacher's performance may be in fact so attractive for others is that the performance also satisfies the teacher's own standards of excellence, and thus one part of his entire performance involves the communication of his pleasure with himself. He acts as if he feels brilliant, more fully alive, more patient and sensitive; that is, he is capable of satisfying whatever standards of self-judgment are applicable at that moment. This more autonomous and internally fed form of the ego ideal strategy invites identification in order to share in the source of energy and self-satisfaction. Less potent but equally attractive for some students are the ego ideal's messages which call for love and admiration or which communicate such a great deal of self-involvement that there is little room nor need for others.

Teachers may use the ego ideal strategy in a variety of ways. Some rare, exceptional people have the ability to carry off an entire lecture course aided by continuous charisma, humor, and charm. More often, teachers rely on their ego ideal capacities on a less consistent basis; that is, they feel more comfortable in dealing with particular issues or content areas as an ego ideal or they rely on the ego ideal strategy to bulldose their way through student affect or resistance generated by previous or current functioning in other task strategies. Being able to fall back on one's charisma or energy can be an attractive alternative to exploring with students why they are bored, angry, tense, or generally discouraged with the course.

For the teacher as an ego ideal, there are several forms of student feedback which indicate their responsiveness to his efforts at conveying his enthusiasm and commitment to the material and the excitement and challenge he finds in his work. A student's involvement, sense of excitement, and bursts of energy and vitality, are all interpreted as positive outcomes. The student who suddenly appears alive and willing to engage himself in the ongoing learning process, despite the struggle and energy expenditure or the ambiguous nature of the situation, is validating the ego ideal strategy. At times, students give the appearance of having 'had their batteries recharged' by the teacher or they may unknowingly be modeling or imitating him. Although the ego ideal may be temporarily embarrassed by these kinds of successes, it is predictable that he would also experience some satisfaction with these outcomes.

However, there are certain risks for students in responding to the teacher as an ego ideal. They tend to be concerned about being too attracted by or identified with the teacher. Some students, still in the process of formulating their own identities, may become threatened by the extent to which they are fusing with the teacher; they may begin to feel unsure about what parts of themselves are really them and what is the teacher in them. Other students, who have concerns about intimacy, may develop fears of becoming too close. Still others may find themselves feeling helpless and overwhelmed as they have allowed themselves to be reduced into passivity by the teacher's energy. A very fearful fantasy for this group of students revolves around the question of what happens when the energy supply disappears as the reality of the approaching end of the term is confronted. Finally, one may be very fearful of being scorned by a narcissistic teacher who expects continuous action and responsivity. A narcissistic teacher may be so wrapped up in his own energy and enthusiasm that he may leave behind the very people he is trying to have an impact on. The narcisstic ego ideal has the potential to be like the scoutmaster who excitedly leads his troop onto the train platform, jumps on just as the train is pulling out and looks behind to find his forlorn young scouts left on the platform. Not too many students enjoy being left on the platform watching the train pulling out, despite the enjoyable march to the station. Thus the locus of the ego ideal's influence rests in his attractiveness as a model and in his enabling students to vicariously draw on his energy. When the locus of a teacher's impact is the teacher himself, when he encourages students to experience him as an authentic human being, we are confronted with the teacher as a person.

The Teacher as Person (P)

Beyond the fact that the teacher may know more about the field than the student, beyond the fact that the teacher has certain rights, responsibilities and duties which flow from his formal position in the larger system, beyond the fact that the teacher is a gatekeeper to and recruiter for the various collectivities of which he is a part, beyond the fact that the teacher can sometimes be of use to the student who is formulating and pursuing his own goals and beyond the fact that the teacher can upon occasion find the energy and skill to satisfy his own standards of excellence, beyond all these facts remains the inescapable fact that the teacher is also a growing, changing and experiencing human being with needs, desires, wishes and conflicts of his own. The sixth and last aspect of the teacher-student task relationship which we would like to isolate and discuss is the teacher as a person.

The teacher as person aims at engaging students in a mutually validating relationship within which both the student and the teacher feel sufficient trust and freedom to share their ideas and personal reactions, not only to the course material, but also to matters which may fall outside the usual definition of what is relevant in a classroom. We are referring here to more than just the notion that the manner in which teachers interpret and perform their roles is influenced and shaped by their personal needs, desires, and perceptual styles. We accept as givens the notions that every social role places constraints upon the extent to which personal gratifications may be obtained within that relationship and that different teachers will present themselves in very different ways when they are functioning as experts, formal authorities, socializing agents, facilitators and ego ideals as they struggle to integrate various expectations and pressures within their own interpersonal and cognitive styles.

In thinking about the teacher as a person our focus is a little different in that we shall attempt to describe some of the uses and functions served by more personal out-of-role behaviors on the part of teachers and students. A teacher may use himself, his personal feelings or experiences in order to facilitate a transition to another task strategy or additional movement within a current strategy. Thus, he may share his own sense of discouragement with the movement of the class in order to move the class in the direction of sharing their feelings and working on its sources. In this instance the adoption of a person strategy seems to be in the service of a major facilitative thrust. Or a teacher may relate a dream of his in order to make a concept more concrete, and real; that is, rather personal material is being used to unleash some expert considerations.

An example of the way in which functioning as a person can be supportive of student socialization is when a teacher relates some of his experiences as a participant observer in order to convey a sense of what some psychologists actually do and can experience as researchers.

We also allege that a teacher and his students both have a fundamental interest in having themselves, and not simply their task-related selves, validated as real and authentic people within the relationship that is developing in the classroom. Basic human and interpersonal themes, including issues of trust and misperception created by people who want to be seen as similar in some respects, or who want to be respected although dissimilar, and concerns about trustworthiness and affection--in short, the full range of human needs are very much a part of the teaching-learning transaction.

Consider the efforts by teachers and students to indicate that they continue to exist beyond the classroom. The implication is that each is telling the other that if he continues to be seen solely in terms of his activities within the classroom then the relationship cannot help but remain a highly limited and less than ideal arrangement. Teachers sneak in little anecdotes about their own days as students, about their families or their political activities. Students allude to their summer vacations, their problems with parents, their weekends, their religion, their encounters with members of the opposite sex, and their skirmishes with the law. Each is involved in a process of asserting that he would like more of himself to be validated than simply that limited part of him which joins with the others in the pursuit of narrowly-defined course goals.

The other parts of oneself, for both the teacher and the students, are not simply those aspects which exist outside the classroom. Equally important are those feelings and reactions which, while not explicitly part of the agenda for class discussion, press upon one's consciousness. And thus an individual in the classroom may be impelled to break through the task-oriented discussion to comment upon an absurdity which has just occurred to him or to express irritation or a sudden burst of pleasure. How unusual is it for a teacher to honestly acknowledge that he looks forward to coming to class and that he really enjoys the contact with his students? Or what about the unusual role conflict faced by a graduate student teaching fellow who feels like sharing the irony of having just come from a graduate course where he completed an exam and is now about to give his students an exam? What about the case of a teacher who feels that he is receiving an unusual amount of resistance to a short assignment, and who shares his discomfort over being so attacked in order to work on his own concerns about grades and being an authority figure as well as the concerns of his students. And finally, is this aspect of the teacher-student relationship not relevant to a student who wishes to share his disbelief and the difficulties he is having with some affect-laden concept or proposition, such as the implications of Freud's oedipal complex? Each of these examples is a commentary upon the extent to which the speaker wishes to expand the range of legitimate activity to include more subjective or emotional reactions to what is going on.

For both teachers and students the gradual and sometimes agonizing growth of mutual trust, respect and affection can be a liberating and extremely rewarding aspect of the teaching-learning experience. The sense of being more than a product and not just another name on a class list can be very self-esteem building, especially for those students who have strong affiliative needs, or who are committed to testing, exploring and confirming different parts of themselves. The development of some awareness of the teacher as a person and some understanding of the person-role conflicts he is struggling with can generate a great deal of surgency and activity which may reduce the distracting paranoid or depressive concerns which often accompany mistrust. An equally positive outcome can be associated with the growing development of tolerance for mutual ambivalence in the student-teacher relationship.

Some students have a great deal of difficulty handling the more intimate aspects of the teacher as a person and exert considerable pressure in the direction of mutual impersonality. Because of a real or fantasized history of painful experiences with previous important authority figures, or because of strong fears of being rejected if they exposed more of themselves, or because their style has been to hide what they consider to be totally unacceptable parts of themselves behind masks, facades, or cautious and ritualized behavior, many students back off from contact involving mutual confrontations with teachers. Some students respond to the teacher as a person by demanding that the teacher shift to a more impersonal strategy, such as the expert. In this instance a student may also be expressing his concern that affiliative and self-indulgent goals will supercede legitimate work; that is the learning of facts. Under these circumstances teachers may be accused of having abdicated their responsibilities by becoming "one of the boys". The plea for more distance here very likely has something to do with a student's anxieties about too much being revealed cr their concerns about a lack of clarity with respect to limits; that is, who will stop things if they begin to go too far and to get too intense and personal.

We would not want to leave the impression that these communications of personal experiences, feelings and 'out-of-role' identity are irrelevant to the manifest task of teaching and learning. If one of the latent goals of the teacher as an ego ideal is to convey the relevance of the course material to what is worthwhile and exciting in life, then the latent function of the teacher as a person is to convey that the intellectual matters under discussion are not irrelevant to the conduct of a life that is within the range of the students in the class. To the extent that the teacher can convey how he came to be interested in these matters or how his interests are sustained by their application to issues of concern to him in his "everyday life" the student can come to understand the relevance of the teacher's career and knowledge to his own interests and personal needs. While one can imagine that a passionate and thoroughly admirable teacher may inspire students to join the quest for his version of the Holy Grail, one can also imagine that students are affected by hearing of the haphazard chance and error-ridden routes by which some academics found their way into the fields. Some of the reasons why a career is chosen or an interest sustained are far from the stylized versions selected for inclusion in the "Lives of Great Men" mythologies. Thus the teacher as person is not only addressing his own need to recognize the self he is portraying by his performance. He is also performing a vital task of puncturing the various mythic constructions which students may have developed and the net effect of this is both to decrease the awe in which he is held and to increase the extent to which his interests reveal him to be an ordinary mortal in pursuit of a recognizable and manageable set of goals. Furthermore, as the teacher begins to make available these kinds of information about himself he is also enabling the student to be "all there" and to work on the integration of his disparate elements in an accepting or trust-inducing interpersonal environment. Given the nature of the aims associated with this strategy, it is not unreasonable to expect that both students and teachers are more likely to relate as real and authentic beings in the latter rather than earlier phases of the class' development.

Table V-1 summarizes some of the contrasting goals, prototypic behaviors and motives which characterize each of the six teaching strategies.

TABLE I

Summary - The Teacher-As Typology

The Teacher As	Major Goals	Characteristic Behaviors and Skills	Major Sources of Student Motivation	Major Sources of Student Fear
Expert	To transmit the relevant findings fundamental concepts, and analytic perspectives of the field and to ensure that the students have mastered them.	Lecturing, scholarly preparation, organization, and preparation of material, asking and answering questions, handing out dittos on books, discussion questions and terms, connecting students with other experts and resources.	Needs for active mastery, achievement and intellectual competence, curiosity and intrinsic interest in the material.	Fear of being or appearing stupid or incompetent, fear of failure in one's own eyes, fear of being overwhelmed or publicly shamed by a more experienced and intellectually capable teacher, discomfort generated by disturbing material or questions.
Formal Authority	To set goals and to clarify the procedures for achieving them, to ensure that students are doing what is expected of them and that they are in compliance with the rules of the institution in the interest of learning and decorum, to provide students with clear indications of their progress in the course based on uniform standards	Defining the course structure, setting deadlines and assignments, establishing the ground rules for disccusion and decorum, curbing deviancy, establishing standards of excellence, preparing and grading exams and other uniform procedures for evaluating student performance.	Dependency and conformity needs, need dominancy, reduction of uncertainty and ambiguity lessens discomfort from diffuse anxiety and depression, need to test one's potency against the teacher's power, clear limits, lessen the possibility of guilt over not producing, "grade grubbing".	Fear of loss of autonomy, of being lost and seduced into pursuing irrelevant material or discussion, fear of being seen by the teacher as passive, dull, unworthy.

TABLE I (Continued)

Summary - The Teacher-As Typology

The Teacher As	Major Goals	Characteristic Behaviors and Skills	Major Sources of Student Motivation	Major Sources of Student Fear
Socializing Agent	To recruit the neophyte into the teacher's culture, to clarify goals and career paths beyond the course and to provide encouragement and adequate preparation for future work in the field by introducing the student to the concerns and activities of those already working in the field and by clarifying the courses and occupational possibilities which lie ahead for students interested in pursuing this field.	Close teaching, discussing the paths of entry into the inner circle, sharing one's underlying values and assumptions, clarifying the demands, rewards and obstacles of the major field and the academic world, clarifying career paths, future careers and other opportunities.	Need to clarify one's own interests, values and calling, wish to be part of the teacher's "inner circle", to be initiated and "in", to share in the rewards and status, needs for approval, respect, inclusion, the performance of shared valued activities is esteem-building.	Fear of being brainwashed and possibly rejected by an ever-receding socializer, concern about having one's options reduced or becoming dependent on the teacher's rewards.
Facilitator	To foster intellectual and creative growth and learning in the direction of the student's own interests and strengths by helping him to move beyond whatever is blocking his full potential and by assisting him to reach his own goals more effectively on his own terms.	Bringing students out and assisting their growth, sharpening their awareness of their strength, interests and skills, using insight, problem-solving and innovative learning and teaching experiences to help students reach their goals, focusing on blocks to learning and modifying classroom structure to reduce reality based affective responses which interfere with learning.	Self-actualization, dependence, self discovery and confirmation to grow in the desired direction, reduction of obstacles liberates more energy for creative work, reduction of or confrontation with inner conflict may lead to exciting insight and discovery.	Fear of not developing a clear and functional identity, fear of getting in too deeply and of confronting mere anger, doubt and fear of becoming a familiar "grade grubber" or adapting other more conservative strategies.

TABLE I (Continued)

Summary - The Teacher-As Typology

The Teacher As	Major Goals	Characteristic Behaviors and Skills	Major Sources of Student Motivation	Major Sources of Student Fear
Ego Ideal	To convey to the students via the teacher's own enthusiasm, commitment, and involvement in the course material, the excitement, challenge and value which he finds in his work and in his given field of study.	Demonstrating the ultimate worthwhileness of and personal commitment to one's field and educational goals, providing a model of competence and enthusiasm, being alive and excited.	The desire to feel alive, the need for a model who personifies one's ideals, fusing with an alive teacher can reduce one's own self-doubts and reluctance to act, vicarious enjoyment of charismatic aspects of model.	Fear of becoming bored, unmoved or cynical, concern over too much involvement or being seduced into passivity by a narcisstic teacher, fear of being scorned by the teacher or hooked onto the teacher's energy-supply.
Person	To engage the student in a satisfying relationship within which both the student and the teacher feel free to share their ideas and personal reactions not only to the course material but to matters outside the usual definition of what is relevant in a classroom, to convey the full range of human needs and skills relevant to and sustained by one's intellectual activity, to be validated as a human being, to likewise validate the student's identity.	Being self-revealing in ways which clarify one's totality, beyond the task at hand, expressing personal needs and tensions, revealing out-of-role aspects of oneself or role-person tension and incongruities, being trustworthy, open and warm enough to encourage students to reciprocate.	To desire to be known as more than a student, the need to have one's life cohere, self-confirmation and esteem leads to a sense of surgency and activity, need for affiliation, reduction in distracting paranoid and depressive concerns as the students relate to the teacher as a real and warm person, a tolerance of mutual ambivalence.	Fear of being rejected or ignored as a person, concern about being viewed as a product or another name, fear of not being validated as more than a student.

This brings to an end our presentation of the six teaching strategies, viewed as oversimplified yet separate and distinct functions to which teachers may want to address themselves. Our aim up until this point has been to articulate a typology which is potentially useful in making some sense of the myriad of ways teachers and students respond to each other and to diverse task pressures. However, in the real world of task interaction the norm lies closer to a reliance on complex combinations and interweaving of multiple strategies in the interplay between students and teachers within and across several strategies rather than on an exclusive reliance on a single strategy. Teachers initiate behavior relevant to a particular strategy or a set of strategies and these are reacted to by students. As one possibility, students can be validating and accepting the teacher's strategy or combination of strategies at the moment. Their message is one of legitimacy with respect to the strategy, that they are quite willing to go along with what is happening, and that they feel little or no desire at this point to have the teacher switch strategies or change what he is doing. Let us call this validation of the strategy. Students can also express more than just validation or legitimacy; they can be very satisfied with the ongoing process, enjoying what is happening, and wanting it to continue. They might even resist or communicate their displeasure if the teacher stopped what he was doing or changed his style.

At the opposite end are two separate yet related possibilities that rest on considerable student dissatisfaction. For a variety of reasons, some we have attempted to elucidate, some remaining unknown, students can experience considerable generalized dissatisfaction or disappointment with the teacher's use of a strategy, or a combination of strategies. The call here may be for the teacher to do a better job at what he is doing without frequently indicating whether more or less of the strategy is being asked for or whether the students want the teacher to switch into another strategy. When a student's dissatisfaction is tied to the fact that in his view the teacher is relying too heavily or not enough on a particular strategy then some sense of directionality is implied. The message may mean "You are being too much of A, be less or it and more of B." Or conversely, "You are not being enough of A, cut dowr on the B and provide more of A." In other words, the form of dissatisfaction frequently implies not only a direction towards which one ought to move in order to improve things, but also some reference to an alternative strategy that should be invoked.

A teacher's response options are intimately tied to those of his students. Thus, he can function as an expert, sense that it is viewed and reacted to by his students as legitimate, and he will proceed in a similar manner until he runs into some demand for change, or he initiates a shift himself. For example, a teacher may be performing as an expert, not like his students' responses, and suddenly shift to being a facilitator; consequently he is playing down his expertise and thrusting forward his facilitation effort. If a student makes a request that a teacher play down what he is doing and the teacher continues on his way, then this also has an implied asserting or thrusting forward of a particular strategy. Finally, a teacher can deliberately refuse to comply with a student's request for more of a particular strategy or he may reject the message that he drop what he is doing and try to function within the confines of a different strategy, or set of strategies. This interactive process can be seen at times covering a short burst of moment-to-moment or act to act interaction on the interchange or may cover a particular segment of time or even a whole session.

In describing some of the more general ways in which student-teacher interaction is characterized by mutual pressures and counter pressures we have also introduced the reader to some of the assumptions which are responsible for the way a scorer using the Teacher As scoring system would operate. It is appropriate to shift to a more concrete case illustration.

Session 19 in Mr. C's class was selected not only because it is a potentially rich illustration of the usefulness of the Teacher-As scoring system, but it is also of interest because it seems to have represented a critical turning point in the development of Mr. C's class. Let us begin this anslysis by first introducing some of the events, characters and background which led up to this particular sequence of interaction. Then we shall present the transcript as well as the act-to-act scores from the Teacher-As[3] and Member-Leader[4] scoring systems. The analysis and interpretation of the major segments of the transcript rest heavily on this data as well as some of the material presented earlier.

The Teacher-As Typology and Teacher-Student Interaction
Introduction to Session 19

The immediate external precipitating event for much of what happens in session 19 of Mr. C's class was the test given in session 16 and returned in session 17. It is also clear that many of the issues explored and alluded to in sessions 17, 18 and 19 had been part of the underlife of the class for some time. When Mr. C handed the tests back to his students he also called for a discussion of the test items and answers. Mr. C made it a practice to review all of the multiple choice and short essay questions because he felt the discussion could be helpful to the students. In addition, he wanted to share with them some data on how good or bad the items were and he also wanted some similar feedback from his students in order to improve the test items.

The early phases of session 17 proceeded rather uneventfully, with the exception of a few short bursts of Contention and Challenge, which centered around minor disagreements over definitional or factual issues. These bursts seemed to attract little sustained energy and they tended to recede rather quickly. The challenging of test items or Mr. C which did emerge seemed to be mainly concentrated in the discussion of two items which dealt with Negro-white differences in intelligence and functioning and the heredity-environment issue, a theme which came up later as well. One item in particular, led to a fairly acrimonious and sustained critical exchange attack and disagreement from several students. The session ended with a sense of unfinished business, but with a promise of more to come. The seeds of confrontation had been planted.

In this spirit, Mr. C opened session 18 by heroically announcing that he was ready to do battle. He acknolwedged that some students had given him a bad time in the previous session, that he had very mixed feelings about coming to class today, but that he was prepared to confront the issues raised by the students and that he hoped the class would not hold back. Having cast his gauntlet into the arena, he temporarily backed off by handing out some dittos and briefly discussing them. Shortly thereafter he returned to a consideration of the remaining multiple choice items. This was accomplished with only a moderate degree of resistance.

The really serious and intense confrontation, at least on the substantive or content level, focused around a short essay question. The reader should be familiar with the wording of this question, since it is referred to on several occasions in the transcript, and it will enable him to gain a feeling for when the discussion really has drifted away from substantive issues. The item reads as follows:

> "Deutsch studied two New York City schools in lower class neighborhoods--one predominantly white, the other predominantly Negro. He found that Negro children (matched for age, sex, and social class) showed consistently lower school performance and more anti-social behavior than whites, these differences increasing with higher grade level. Give three different plausible explanations for Deutsch's findings."

Mr. C took the initiative in clarifying the issue as to content. Before this question came up for consideration he mapped out on the blackboard an extensive chart summarizing many of the potential genetic, prenatal, postnatal, and other environmental, social or interpersonal factors which may account for the Negro-white differences noted in the question. Mr. Wr a very bright student who actually did quite well on the question, fired the first salvo. He challenged Mr. C by stating the position he maintained for some time, and had a very hard time introducing some of the complexity it deserved; namely, that the differences are all due to discrimination against Negroes.

In response, Mr. C affirmed his position for the record. As a social scientist, he argued that he could not discount the possibility of constitutionally determined racial differences in potentialities for intellectual functioning. At present, however, it was impossible for him to separate the potential impact of genetic determinants from the known deleterious and class-linked effects of prenatal influences. Until one can partial out the impact of prenatal experiences and identify the remaining contributing factors, Mr. C maintained that one should focus attention on the data which was available meaning that one should evaluate and attempt to interpret the numerous studies which point to the impact of different environmental conditions. As a matter of personal faith, he added that he did not believe that significant racial differents in intellectual potentialities existed, but he was open to further information.

Mr. Wi, one of the main antagonists in the next session, challengingly reminded Mr. C that there was also no definitive evidence available against the argument that Negros were genetically inferior to whites. At first Mr. C responded with considerable anger and viciously accused Mr. Wi of trying to establish the existence of something like Jewish blood or a Polish temperament. Mr. Wi was not too visibly disturbed by the attack and suggested that the relevant genetic structures may be identified one day. Mr. C backed off and attempted to be helpful by briefly outlining the kinds of arguments one would have to make and the kinds of data one would need if this were so. Mr. C was, however, still very annoyed and frustrated and he chastised the class (really Mr. Wi) for falling back on personal opinions and stereotypes and not using the material which they had read and which he had presented. In a denigrating and distancing tone, he added that on the basis of the material presented in class, they should have had little trouble with the question.

Mr. C then switched the focus of attention by suggesting that some people were probably having trouble with the issue for personal reasons and that helpful information was being ignored or denied. He also shared his feeling that a personal disagreement had developed between him and Mr. Wi. He called for other students to present their impressions of what had been going on. Several responded that they did not see a personal disagreement, but a disagreement about facts. They also suggested that more information might be helpful. Mr. C then reviewed all of the data he had listed on the blackboard as if to terminate discussion of the issue at the substantive level once and for all. He also placed the responsibility for explaining those findings on the students who rejected this kind of interpretation. The session ends with Mr. C reminding his students to check with him if they were to collect some extra points.

By translating the events and developments in sessions 17 and 18 into Teacher-As terms, we gain some insight into the kind of themes which could be carried over into session 19. Probably the most pervasive and persistant issue to note is that both Mr. C and a number of his students were quite disturbed by his functioning as a formal authority. This being the first test of the term, it raised for some students including Mr. Wi and Mr. Wr the painful spectre of evaluation as well as the question of how one deals with potentially arbitrary authority figures. Much of their challenging contentious behavior revolves around these kinds of concerns.

It is also fairly reasonable to assume that Mr. C experienced considerable discomfort in functioning as a formal authority. His desire to share and receive feedback on the test items, his granting of extra points, and his admission that he is fallible and can write very poor items all have a very reparative quality to them. In one sense, these all sound like an attempt to make students who were forced to undergo the painful experience of a test and his arbitrary power feel better by giving them soothing gifts. At the same time, by calling for feedback from students on the exam items, he was making himself vulnerable and in a way he may have been undercutting the students' resentment. One also has the feeling that behind all of this was an attempt on Mr. C's part to convince his students that he was a fair, trustworthy, non-punitive, flexible and caring person rather than just another impersonal, arbitrary authority figure. Thus, Mr. C seemed to want to play down the formal authority aspects of his functioning and indirectly he was trying to undo some of the deleterious consequences of having administered a test, and of having excercised some of his power.

Much of Mr. C's anger in session 18 reflected his sense of frustration in functioning as a socializing agent. There are really two considerations here. On the one hand, he wanted to communicate how professional social scientists operate when faced with a potentially heated issue; that is, they try to arrive at a conclusion which does justice to most of the data, they are clear about what qualifications are required and they leave open the possibility that new findings may force a reassessment. On the other hand, he also had a great deal invested in socializing some members of the class in the direction of a more empathic, "liberal" view on the race problem. He sent his message over and over again. The argument that Negros are intellectually inferior to whites because of hereditary factors is too simple and cannot be proved or disproved at this point. It also enables whites to disown their contribution to the problem. Rather, we have a considerable amount of data on the deleterious impact of different environmental, social, and interpersonal circumstances in Negro development and functioning. Mr. C keeps inviting the students to appreciate and understand the implications of this information. Both Mr. Wr and Mr. Wi, two rather rebellious males who are probably speaking for other members of the class, reject Mr. C's socialization efforts.

Much of Mr. C's efforts at socialization involve a heavy reliance, at least at first, on a consideration of straight factual material. Functioning as an expert in the service of socialization goals brings Mr. C up against two issues. First, there is the realization that the problem is not resolvable at this level, since there are powerful personal feelings and undertones of formal authority concerns over autonomy and independence and socialization anxieties over alienation from old values operating. Mr. C also recognized his own need to share with the class his sense of frustration and discomfort with what had been happening as well as the need for some of his students to become a little more aware of the extent to which their strong personal feelings were making it difficult to understand not only the substantive questions, but also what was going on in the class. Mr. C's sporadic efforts to open these issues up by adopting a facilitative strategy are primarily in response to these concerns. Finally, we note that much of his functioning as a person was also tied to his efforts to facilitate the class' movement in this direction. We enter session 19 with these unresolved issues and burdens still with us.

The Analysis of Session 19[5]

Session 19 begins before Mr. C arrives.

			Teacher-As (TAS)	Member-to-Leader (M-L)
1.	Mr. Mk to Mr. Mo:	Have you heard about the latest coup in Viet Nam? The Catholic group is taking over...	-FA	MA,CD,AE
2.	Mr. Mo:	There are revolutions per minute down in South Africa. In Time magazine some German professor burned himself dramatically in protest.	-FA	MA,AE
3.	Miss Jt:	Yeah, I saw that picture. Did he die? It said he was in the hospital....It was a beautiful shot..		MA,AD,DD

Segment Summary
Mr. Mk, Mr. Mo: -FA

We have assumed that Mr. C is the symbolic target of much of the hostile feeling in this segment. Although the connection is quite indirect, given the events of the past few sessions and subsequent interaction, it seems to be a justifiable decision. Thus, in the first few moments of interaction we are given a brief symbolic glimpse of how some students can feel about powerful individuals who exercise power and control over them. There is a sense of danger of revolt against established authority in the air. The destructive and anxious quality to both Mr. Mk's and Mr. Mo's fantasies are not difficult to understand in the light of their different, yet related concerns about Mr. C as a formal authority. This will emerge more clearly later on.

(Mr. C arrives)

			TAS	M - L
4.	Mr. C to Miss Sr:	I will have these (referring to dittos outlining the research project) run off. They will all be ready by Monday, and I'm going to be handing out a whole mass of material then. (Low depressed tone)	FA	RP,DM,DE
5.		So if you want to go ahead and think about an area that you'd be interested either in doing some research or doing some review articles--that's about as far as you can go with your paper. OK?	F,FA	RP,DM

			TAS	M - L
6.	Mr. C:	All right, uhm--there were several people in this class who had an... extra point on that item number five...and I added them in and so there are some changes.	FA	RP,DM,DD
7.		If there's anybody else who has an exam....outstanding with those five points please speak to me after class or with that five, because I'll include it.	FA↓	
8.		Let's see, that's Sz,Sg, Wr, and Wl, and Ax, Tl, and Mr. Mk, Rn, Br, Fx, Miss Dl, that's it.	FA	DM
9.		Anybody else hand them in and we'll handle them afterwards, o.k.	FA↓	DM,DD
10.		Now..uh..we've lost our front row today, I see.	FA↓,P↑	CD,DE
11.		(Loud) Uh..I must admit that you people..a number of you..raised a very powerful argument on this first question (referring to the first short essay question). I was thinking about some of the things you were saying quite seriously...	FA↓,F↑	GI,RP,CD, AE,DD
12.		for a while..	FA↑,EI↑	
13.	Class:	Laugh.	FA,EI	AE
14.	Mr. C:	and uh..the thing doesn't just go in one ear and..uh..I say 'well, that's it and we turn you off?'	FA↓,EI, P↑	
15.		Uhm..and..mm it's clear that the word 'plausible' means 'plausible.'	F↑	RP,DM,DD
16.		So very clearly, from that point of view, in reevaluating it, I think there is a basis for a case.	FA,F,EI	RP,IN,DD

Segment Summary

Mr. C: FA↓F↑, EI↑, P↑

The thirteen acts which comprise this segment involve considerably more than just a business-like clearing up of some unfinished details on Mr. C's part. His handing out of dittos, granting of extra points, acknowledgement of absent students and his final recognition of the students' arguments and his own fallibility are a continuation of a theme we have seen earlier. He seems preoccupied with convincing his students that he is responsive to their arguments, that he is fair and willing to make concessions and that he cares enough to notice when people are absent. By down-playing his functioning as a formal authority and asserting himself as a facilitator, ego ideal and person, he seems to be trying to offset the impression which he feels they have of him as just another mean, arbitrary, evaluating authoritarian punitive and inaccessible formal authority. In a sense he has anticipated Mr. Mo's later comment that arguing with Mr. C is like "fighting City Hall." In spite of how tense the situation is and his depression over not being able to break through the formal authority barrier to his students. Mr. C presents himself as a fairly strong and somewhat amusing ego ideal. The intent is probably to reassure his students of his strength and to convey his feeling that it is both more effective and legitimate to confront these kinds of issues, rather than to ignore or to bury them.

Mr. C's seemly off-hand comment in act 10 noting the empty front row heralds a striking transition probably motivated by powerful personal concerns bursting forth. The focus on the empty first row is not unrelated to the issues already mentioned. Mr. C is not only depressed because he sees himself as having driven students away because of his punitive functioning as a formal authority, but he also felt rejected and abandoned in his socializing efforts. Specifically, Mr. C was concerned about some people moving back when they usually sit in the front row, and he was struck by the absence of Mr. Mn, the only Negro in the class, from his usual front row seat.

Mr. C was highly identified with Mr. Mn and, at a preconscious level, saw himself as allied with him. Part of this sense of alliance arose from Mr. MN's early, and as it turned out, rather tentative and fragile enactment and support of Mr. C, and part reflected a fantasized implicit and collusive mutual defense pact in the face of an anticipated attack from certain other members of the class. Because he was aware of the long-standing antagonism between the Polish and Negro communities in Detroit (Mr. Mn's home town) and because of his own Jewish background, Mr. C had constructed a very heroic fantasy in which he and Mr. Mn were standing together, confronting the anti-Negro and anti-Semitic members of the class and socializing them in the direction of a more "liberal" tolerant perspective. Mr. Mn's absence not only shattered this fantasy, but it also communicated his feeling of insufficient trust and support of Mr. C as well as his rejection of Mr. C's efforts to enlist him in the missionizing task which lay ahead. Given the advantages of hindsight, and additional data, it is clear that Mr. C had not been aware that such a potential alliance was frightening and anxiety-provoking for Mr. Mn. He failed to realize the extent to which Mr. Mn's concerns focused more on his fears of being evaluated, his self-defeating style of relating to authorities, and the degree of anger he had bottled up and was incapable or unwilling to deal with. Mr. Mn's commitment to and involvement with the class and Mr. C remained very low from here on.

			TAS	M - L
17.	Mr. C:	And what happened was that both of us (referring to Mr. Wi and himself) all of us...including myself, didn't look at the question, and were arguing with each other.	FA↓,F↑, P↑, EI	GI,RP,CD, DE

			TAS	M - L
18.	Mr. C:	And I get the feeling that I was very involved and you were getting very involved and we were sort of ramming each other down the throat.	F,P,EI	RP,CD,AE, DD
19.		So, ...mm after I guess I had cooled off a bit I looked at the question.	P,EI	GI,DM,DD
20.		And it struck me as very uhmm... you know...funny that there was a part of the question that all of us missed.	F,EI	CD

Segment Summary

Mr. C: P↑, F,EI

			TAS	M - L
21.	Mr. C:	And the part refers to the fact that these differences are increasing with higher grade level.	X↑,F↓, P↓	DM
22.		Now what does that mean?...Well, what does it mean?	X	
23.		What can happen if increases are taking place with higher grade level?	X, SA↑	
24.	Mr. Mk:	Environmental.	X,SA	AC,DN
25.	Mr.C:	Something in the environment is going on because we can't...is it reasonable to assume that genetics suddenly start getting activated with age?	X	AC,DM

Segment Summary

Mr. C: F↓,P↓,X↑,SA↑

Mr. Mk: X, SA

			TAS	M - L
26.	Mr. C:	Go on, Mr. Wi	FA	DM
27.	Mr. Wi:	Well, the decreases become more noticeable. It says...isn't it that they become more noticeable?	-X	RS,CD
28.	Mr. C:	It says that these differences are increasing with higher grade level.	FA↑,X	DM
29.	Mr. Wi:	The differences between this person (Negro) and the normal person. But that differences...	-FA↓, -SA↓,X	RS,CD
30.	Mr. C:	The differences between the Negroes and the whites increase over time.	FA↑,SA↑	MA,DM
31.	Mr. Wi:	Yeh..now is that in IQ or in achievement?	X,-FA↓	RS,CD
32.	Mr. C:	In anti-social behavior and school performance. In other words, uh...	X,FA↑	DM
33.	Mr. Wi:	In school performance. But...ok... then naturally as you learn..as the material gets more and more complicated the performance of this person is going to be more and more noticeable and more and more deficit... not necessarily because of environmental differences, but because of the complication of material.	-X,-FA↓	MA,CD,DD
34.	Mr. C:	Ok, Miss Jt.	FA↑,X↓	DM
35.	Mr. Wi:	At least that's the way I thought about it.	-FA↓,-F↑	CD,DD

Segment Summary

Mr. C: X, FA↑, SA↑

Mr. Wi: -FA↓,-SA↓,-F↑

			TAS	M - L
36.	Miss Jt:	Well, I don't know..I don't know if I should argue this point now because I don't know if it's a matter of disagreeing with him or not.	FA,-F↑	RP,DN,AE, DE

			TAS	M - L
37.	Mr. C:	Well, whatever you want to say, just go ahead.	FA,F↑	DM
38.	Miss Jt:	No, I just think it's environment, primarily.	X,SA,F	AC,DN
39.		But..well for one thing, as you grow older your social ostracism is more pronounced. And I know it is..you know..in..even in whether it's lower class or upper class or middle class or Negro or white.	X,SA	AC,DN,AE
40.		And so the kids would become more and more regressed, socially..that's socially.	X,SA	AC,DN,DE
41.		And also, academically they're going to become regressed because they didn't have opportunities when they were younger. I don't know..like they come to school with very very little in many cases.	X,SA	
42.		and I know like a lot of our families.. you know something going into school. Most of us knew how to read when we were eight years old..and alot of these little Negro kids didn't get this.	X,SA	AC,DN,DD
43.		And that's environment..because say they have nine kids in their family and the mother's not around.	SA	
44.	Mr. C:	Well, that could fit the conception of the environment that we've been talking about.	X,SA	AC,DM

Segment Summary
Mr. C: X,SA, F
Miss Jt.: X, SA

These four segments taken together are of interest because they reveal not only the extent of Mr. C's own ambivalence about opening up this issue, but also his confusion about how to handle it. He seems very undecided as to what strategies to adopt, and at the same time he is responsive to student pressure. Thus in acts 19 to 20, Mr. C has shifted into a major facilitative and personalized strategy. By sharing his own feelings about the encounter with Mr. Wi, it looks as if he is attempting to move the locus of the conflict from one over factual interpretations to at least one of the places where he feels it really lies; over formal authority issues of power and control. The reference to "ramming each other down the throat" is especially apt. By presenting himself as a model of someone who is not only capable, but is also willing to explore and share his own feelings and the way they may interfere with his capacity to work with students and listen he is putting a great deal of subtle reciprocal pressure on his students to explore and share their own feelings.

Suddenly in act 20, Mr. C shifts strategies. He backs off from the more personal confrontation he initiated and moves into a more proactive, impersonal teaching style which is fairly characteristic of the functioning as an expert and socializing agent. In essence, he has at least temporarily pulled back from his more risky and vulnerable position in favor of a less personal form of confrontation at the more substantive level. Mr. Wi picks Mr. C up on this and at first glance, acts 26-35 appear to be an intellectual disagreement about the interpretation of the question and an exploration of alternate answers. However, the presence of a considerable amount of mutual hostility, resistance and counterdependence, as well as the shifting interaction around the formal authority strategy, all suggest that the expert activity is really being used as a smokescreen behind which other battles are being fought. What we observe going on here is not unusual for Mr. Wi and we shall see this kind of encounter over and over. Mr. Wi is a member of that group of students which we have identified as non-working rebels. He really has very little invested in achieving some degree of intellectual competence, and he tries to maintain a considerable degree of distance and impersonality vis-a-vis Mr. C. Much of his interaction with Mr. C has an argumentative traplike harassing quality. One has the sense of his needing a strong, powerful external authority who will both control him and whom he can attack. His attacks, as we see again and again, usually are centered on issues where he judges Mr. C to be vulnerable as an expert. His style is to enter or initiate interaction at the expert level, to provocatively harass the teacher as an expert, frequently forcing or trapping him into switching to a formal authority strategy, which he can then use to justify his attack in the first place. Therefore, dealing with Mr. Wi as an expert is bound to be frustrating and unproductive, since he has a great deal invested in sabotaging this kind of functioning.

Thus, we see Mr. Wi resisting Mr. C's efforts to deal with him as an expert, and he actively resists pressure to modify his position. In act 29, Mr. Wi strikes out at the socialization pressure he has been subjected to by implying that Negros are abnormal. Mr. C comes down on him pretty hard in act 30 and seems uninterested in dealing further with Mr. Wi's argument.

At the first available opportunity he calls on another student, Miss Jt, whom he knows is fairly sympathetic to and supportive of his position. Here we see Mr. C turning away from dealing with Mr. Wi on the expert level and attempting to draw in sympathetic members of the class to exert peer pressure on Mr. Wi. Mr. Wi seems to sense what has happened and in act 35 communicates his feeling of having been boxed in by Mr. C. The scoring here attempts to take into consideration Mr. Wi's plea to be heard, not dismissed and to have his views respected and taken seriously.

Miss Jt is a little ambivalent about being drawn into the confrontation between Mr. C and Mr. Wi. She wants to support Mr. C's position, but at the same time calls for reassurance from him in act 36 that she can express her own views. She very tactfully keeps her contribution at a fairly rational, cognitive level, but in the main is supportive of Mr. C and he acknowledges this in act 44. In calling upon Miss Jt at that moment Mr. C made a shrewd choice, in that she is involved in a somewhat sexualized and flirtatious relationship with him, and she can be consistently counted on for support.

			TAS	M - L
45.	Mr. C:	What about..uhm..all right, let's assume that this is not such an unreasonable argument that you are raising, Mr. Wi.	F↑,EI	RP,DM
46.		It's possible that the material does get more difficult and that the original deficit that was genetically endowed does come through consistently.	F,X	

Segment Summary

Mr. C: F↑, X, EI

			TAS	M - L
47.	Mr. C:	Uhm..O.K. Go on..go on.	FA,F	DM
48.	Mr. Wr:	Well, the difference in the nature of the material changes because like when you're in kindergarten say or first grade, they're not so much teaching you academics as uh..as uh..	X	RS,CD,AE
49.		You know what I mean..	-FA↓,-F↑ X	DN,AE
50.		there's not too much difference in the children, but as you go on say you're in eighth grade, it's more how you can study..how you can learn.	X,F	
51.		You know what I mean..	F,-FA↓	
52.		like when you have to start doing homework and studying by yourself. I think IQ comes in more there.	X,F	
53.	Mr. C:	So we could interpret this as again going back to the original deficit in endowment..if I follow your argument.	X	DM
54.	Mr. Wr:	Yeh, also I think..uh..you can..I uh..the difference is compounded because of the environment too.	X,SA	RS,AC,DN

			TAS	M - L
55.		It's also compounded because of heredity and...	X,-SA	
56.		it's hard to give three answers that all fit..it's sort of an interaction of the three answers.	-FA,X	GI,IN

Segment Summary
Mr. C: X
Mr. Wr: -Fa,F,X

			TAS	M - L
57.	Mr.C:	O.K. Mr. Ad	FA	DM
58.	Mr. Ad:	One other point. There's also definitely differences--Well, they have found differences in some studies.. in rate of learning.	X	RS,CD,AE, DE
59.		If there's a difference between the two races then this would certainly have something to do with actual rate of development..	X,SA	
60.		Well, it's different between two sexes, too really..that..uhm..the males don't really accelerate while this is more physically..but the males don't really accelerate until a couple of years after the females..	X,SA	RS,CD,DE
61.	Mr. C:	Mm, hmm mm	X,F	
62.	Mr. Ad:	and this I think..this same difference in growth rates..different periods of time can be used to explain what we were discussing and also the differences in potential.	X	AC,DN,DE
63.		And this difference in growth rate can just indicate this difference in potential. Also, it could indicate for a better environment..but this is an argument for heredity.	X,SA	AC,DN,DD

Segment Summary
Mr. C: X,F
Mr. Ad: X, SA

Having received a fair amount of support and validation from Miss Jt, Mr. C begins another facilitative effort with Mr. Wi in acts 45 and 46. He tries again to present himself as a model of openness, who is willing to entertain various viewpoints. His intention it seems, is to support Mr. Wi, as an expert, in the hope that he might feel safe enough to begin exploring his concerns about Mr. C as a formal authority.

Instead of flushing out Mr. Wi, Mr. Wr enters the discussion. However, Mr. Wr's involvement with Mr. C is very different from Mr. Wi's in the sense that he is not as prone to use the expert strategy as an arena in which he can work on authority concerns. Mr. Wr is a bright, introspective, depressed but fairly inner-directed student who seems to keep vacillating between work and rebellion. Much of his cognitive work is done on a private basis and once he has arrived at a position he will test it out against Mr. C. His resistance and counterdependence reflect this work style more than an outright unprovoked hostility to Mr. C as a formal authority. In fact, he does communicate his desire to be closer to Mr. C on a colleagual basis in his repeated checking whether Mr. C knew what he meant. He validated Mr. C's facilitative effort to draw out different viewpoints and he does get around to expressing some of his dissatisfaction with Mr. C as a formal authority in acts 54 to 56.

However, the quality of his hostility appears to be different from Mr. Wi's. At this point, he is not challenging Mr. C's power, his right to give a test, nor does he view him as being an arbitrary inaccessible teacher. Rather, he impersonally accuses him of having done a poor job as a formal authority and even as an expert; that is, Mr. C wrote very poor exam items, since it is hard for Mr. Wr to think of three different yet appropriate answers. We shall hear from Mr. Wr in a similar manner again.

Mr. C does not respond to Mr. Wr because he does not seem to want to interrupt the process of students sharing their views. Mr. Ad joins in and he has a difficult time articulating his position. He seems to be playing an exhibitionistic game of "heh, I've got some good ideas, too" by trying to apply a recent rather peripheral study he had read on sex differences in learning rates to the issue of Negro-white differences. He is more involved in displaying what he has read than in thoughtfully evaluating whether it has any real relevance to the issue under discussion.

			TAS	M - L
64.	Mr. C:	All right. What about the anti-social behavior? Why should that increase over time? Why should the discrepancy increase over time?	X,F,SA↑	GI,DM,DE
65.		Mr. Wi. (quietly)	FA,F	DM
66.	Mr. Wi:	Well, it's because his lack of mental ability becomes more and more noticeable to him. He becomes to feel more and more uncomfortable among the whites.	X,-SA↓	RS,CD,AE, DE

			TAS	M - L
67.	Mr. C:	Why does he feel more uncomfortable among the whites? (calmly)	SA↑,F↑	GI,DM,DE
68.	Mr. Wi:	Because his intelligence isn't up to their level.	-SA↓,-F↓	RS,CD,DE
69.	Mr. C:	But why should this bother him?	SA↑,FA	GI,DM,DE
70.	Mr. Wi:	He feels out of place among them (loud and anxious). They start talking about things he doesn't understand, their level of reasoning's above him; they're learned...	-SA↓,-FA↓ -F↓	RS,DN,AE DE
71.	Mr. C:	So, what happens when somebody starts talking about things that you don't understand?	SA,F↑	GI,DM
72.	Mr. Wi:	It depends on whether I'm interested in it.	-FA↓,-EI	GI,DN,AD, DD
73.		If I'm interested in it, I'll try to find out more. If I'm not interested in it, then I just...	-FA↓,-EI↑ -F↑	RS,CD,AD,
74.	Mr. C:	But where does the impact come from?	FA,SA↑,F↑	GI,DM,DD
75.	Mr. Wi:	What impact?	-FA↓,-F↓	DM,AE
76.	Mr. C:	Well, why should this bother..I mean if, you know..	F↑,SA	GI,DM
77.	Mr. Wi:	Well you just don't feel comfortable talking to him, so you don't associate with him. (loud and angry)	-FA↓,-SA↓ -F↓	MA,CD,AE, DE

Segment Summary
Mr. C: SA↑,F↑,FA
Mr. Wi: -SA↓,-F↓,-FA↓

			TAS	M - L
78.	Mr. C:	Um..Mr. Mk.	FA,F↓	GI,DM
79.	Mr. Mk:	You don't feel as good as they are.	SA,-F↑	DE
80.	Mr. C:	All right, but what determines..why don't you feel as good?	SA,F	GI,DM

			TAS	M - L
81.	Mr. Mk:	I suppose because of pretty clear comparison.	SA	DE
82.	Mr. C:	Where's the comparison? How do you know that you're no good? Where's the comparison?	SA,F	GI,DM
83.	Mr. Mk:	because of parents...	SA	AC
84.	Mr. C:	All right. Go on Mr. Ag.	FA,SA	DM
85.	Mr. Ag:	You don't feel as good because of your environment, because of your social role.	X,SA	AC,DN
86.	Mr. C:	You've got to compare yourself to somebody, don't you?	SA,F	AC,DM
87.		How do you know?	F	DM
88.		I mean..if we live in a vacuum, right, if I grew up in a vacuum I'll never find out whether I'm dumb or whether I'm smart.	F,EI	
89.		All right, is this reasonable? How does somebody find out that they are not as good as somebody else? How do you find out?	SA↑,F↑, EI	DM
90.	Miss Jt:	Interaction.	SA	AC
91.	Mr. C:	How do you know where you stand in this class?	SA↑,FA	GI,DM
92.	Mr. Ag:	By comparison.	FA	DN
93.	Mr. C:	By comparison with what?	FA,F	DM
94.	Mr. Mk:	With somebody else.	FA,F	AC,DN
95.	Mr. C:	Somebody else; some standard out there; information people give you.	FA,SA,X	AC,DN
96.		I tell you on your test: "this is pretty good thinking, Mr. Wi." I give you a good grade; I give you a poor grade, whatever it is.	FA↑	RS,AC,DM, DE
97.		Am I part of the environment?	SA↑,F,FA	GI,DM,DE

	TAS	M - L
98. Mr. Wi: Yeah.	FA,F	AC,DN,DE

Segment Summary
Mr. C: SA ,FA,F,X
Mr. Mk, Mr. Ag, Miss Jt, Mr. Wi: FA,SA,F

These two segments are complicated by the fact that the shifts and transitions take place at a fast and furious pace. Mr. C addressed his initial question to Mr. Ad in order to suggest that a more complicated set of propositions may be required in order to make some sense of the Negro-white intellectual and anti-social differences. Mr. C's main efforts, however, are directed at pressuring Mr. Wi and others in the direction of developing a greater sense of understanding and empathy for how the behavior and reactions of others can affect one's behavior.

In acts 66 through 70, we can see the tension and ongoing tug-of-war developing between Mr. C and Mr. Wi; Mr. C repeatedly comes on as a guilt-inducing and dominating socializing agent and facilitator only to be rejected and resisted by Mr Wi. In act 71 Mr. C really hits close to home by identifying Mr. Wi's feelings as a way of understanding his point. Then there is another sudden shift, and the underlying formal authority struggle emerges again. Mr. Wi, angry and probably feeling trapped, rejects all further exploration for the moment, successfully disowns any responsibility for working toward some understanding of the problem, and we are left with no resolution.

Sensing the momentary futility of continuing with Mr. Wi, Mr. C takes advantage of Mr. Mk's raised hand to shift the focus. It is clear from Mr. C's returning to Mr. Wi in acts 96 to 98 that throughout this segment, he is preoccupied with Mr. Wi. During most of this segment, Mr. C has actively taken hold of the reins and by a combined reliance on his socializing agent, expert and facilitator strategies, he seems to have been fairly successful in moving most of the students to the understanding that the way other people see us greatly influences our views of ourselves and our behavior. The rapid question and answer sequence is an excellent example of the kind of close teaching which may characterize part of the socializing agent's teaching style. By using facilitation in the service of a socializing agent strategy, Mr. C illustrates how the use of immediate feelings as concomitants of the evaluative and comparison process may be helpful in making some headway in the direction of greater empathy for others. In act 96, Mr. C really pushes the point of learning from what one is currently experiencing with Mr. Wi by forcing him to contact some of his feelings about Mr. C as formal authority. It is of interest to note that this is one of the few occasions where Mr. Wi has responded, admittedly in a depressed tone but with some degree of acceptance, and that it took Mr. C's asserting himself as a powerful formal authority to accomplish this. If this sequence can be taken as representative, it suggests that Mr. Wi is most receptive after he has harassed and cajoled an instructor into adapting a "tough" formal authority strategy. We shall encounter a repeat of this interpersonal style later on in the transcript.

			TAS	M - L
99.	Mr. C:	Mr. Mo, you had a comment?	FA,F↑	DM
100.	Mr. Mo:	No, uh..	FA↓,F↓	WI
101.	Mr. C:	Mr. Wr.	FA	DM,DE
102.	Mr. Wr:	Well..uh..the thing is when... they're younger they don't know... if this whole thing is based on their being discriminated against..when they're younger...	FA,-SA↓, -F↓	RS,AE,DE
103.		They're not..there's actually no discrimination and..because the little kids..you know..they associate with don't discriminate against them.	-SA↓,-X↓	RS,CD
104.	Mr. C:	How early would you guess the beginnings of racial awareness come into play?	FA↑,SA↑,X	GI,DM,DD
105.	Mr. Wr:	Well I'd say it might start as soon as say school starts but still it's not...	-SA,-X	RS,DN,AE, DD
106.		they are kind of young and they don't realize..you know..the little white kids don't..don't have social prejudice against them and the little and the Negro kids don't...	-X↓,-SA	
107.		you know..don't understand anything, and as they grow older the prejudice becomes more and more and they..and.. you know..say, hatred increases and they start realizing that they're being discriminated against and they don't like it.	X,F,SA	AC,DN,AE, DD

Segment Summary
Mr. C: SA↑,FA,X
Mr. Wr: -SA,-X↓, F

			TAS	M - L
108.	Mr. C:	Mr. Br.	FA,F	DM

			TAS	M - L
109.	Mr. Br:	I'd say racial prejudice starts in the..4 or 5 years old. I've seen some kids playing together, Negro and white, calling some kids white and other kids black.	X,F,SA	AC,DN
110.	Mr. C:	(fast) What if I were to tell you that there are a series of studies around which show that pre-nursery school children of 3, 4, and 5 years old.. both Negroes and whites when presented with a choice between a white and a black doll will both select a white doll?	X,F↓,EI	GI,DM,DE
111.		What would this mean to you? (quietly)	SA,F	GI,DM,DE
112.		Mr. Mk, anyone?	FA,F	DM
113.		Just call it out...	FA↑,F,-EI	MA,DM
114.	Mr. Mk:	Something to do with the fact that maybe white is a superior color or something or what?	-FA,-SA	RS,DN,DD
115.	Mr. C:	How does a kid find out?	SA↑,F	DM,DE
116.	Mr. Mi:	White suggests being clean.	X,SA,F	AC,DN,DD
117.	Mr. Mk:	They're rewarded for being clean.	X,SA	
118.	Miss Jt:	Also, they're all living in a white world, you know..all the television and white characters..uhm..advertisements are white people, and white Christmas.	X,SA	AC,DN,DE
119.	Mr. C:	So you think it's a matter of frequency rather than..	X	GI,DM,DE
120.		does the Negro live in a white world? Ever been to Harlem?	F,SA↑,EI	
121.	Miss Jt:	No, I haven't.	EI	DN,DE
122.	Mr. C:	White stands out like..ah..like the devil.	SA,EI	GI,DM,AE, DE

			TAS	M - L
123.	Mr. C:	Mr. Rn	FA,SA	DM
124.	Mr. Rn:	I was going to say it's environmental conditioning..I mean..they're conditioned in relation to..ah..to people,	X	AC,DN
125.		they're conditioned in relation to white is considered good, black is considered bad..in not relation just to people but to other things as well.. and it's just conditioned response I suppose is what I'd say.	X,+SA,EI	AC,DN,DD
126.	Mr. C:	Well, you're bringing in the information that we have been trying to read.. that's good (laugh).	X↓,EI	GI,AC,DM, DD
127.		I don't know what the process is.. that's part of it, that may be part of it.	X↓,F	DM,DE

Segment Summary

Mr. C: SA↑,X,F,EI.

Mr. Br Mr. Mk Mr. Mi Miss Jt Mr. Rn	}	SA,X,EI,F

Having engaged in a minor skirmish with Mr. Wi who will return to battle shortly, Mr. C calls on Mr. Mo whose facial expression suggests that he wants to say something. With Mr. Mo's withdrawal and the entrance or Mr. Wr, Mr. C, in a brief span of time has focused attention on three of his most vociferous and persistent antagonists. In Mr. Wr's case we are witness to another rather tense interchange in which he appears to be rejecting Mr. C as a socializing agent and expert, until the last act of this sequence, when he finally makes a tentative connection between discrimination and hatred. There is a strange quality to this interaction, if we can use this term. One has the feeling that Mr. Wr is thinking aloud about the problem while holding Mr. C at bay. Finally he arrives at a conclusion independently which just happens to be at least partially consistent with Mr. C's point of view.

A very different scene unfolds in the second segment. Here, Mr. C receives considerable support for his functioning as a socializing agent, expert, ego ideal and facilitator from Mr. Br, Miss Jt. and especially from Mr. Rn. It is as if a battalion of loyal troops have been called up for review in order to impress Mr. C's detractors. Thus, in act 126 we see him expressing some delight and relief at this support, as well as about the fact that at least some students seem to be able to use relevant readings or concepts and to think "psychologically". For Mr. C this is the first indication of positive feedback he has had in this session with respect to his competence as an expert and his effectiveness as a socializing agent.

Mr. Rn, a very unusual student contributed to a fair extent to this temporary state of optimism. He is a very bright, confident and relatively secure engineering student who seems to work creatively in the kind of informal and free atmosphere Mr. C has tried to create. He was very involved with the course and its possible application to other fields and problems outside the class. As is evident in acts 125 and 126, he is more prone to bringing in cognitive information from outside readings than his own personal views. Part of Mr. C's ambivalence, evident in act 127, seems to be in response to Mr. Rn's tendency to remain somewhat distant. However, Mr. Rn certainly did not see Mr. C as a malevolent, punitive formal authority. He seemed to be feeling pretty good about his relationship to Mr. C and he gave the impression that he felt comfortable about his competence in relation to Mr. C, both as a teacher and as a potential colleague.

			TAS	M - L
128.	Mr. C:	Well, what's coming out of all this, you see?	X,F	GI,DM,DD
129.		Uhm, I guess what I'm suggesting is that the data is..this is the point I've been making before..the data clearly show that there is no basis for rejecting or accepting at this point the genetic interpretation solely..	X,FA↓	RP,DM,DE
130.		which means that the suggestion that a plausible answer is a genetic interpretation is very clearly a reasonable one. But..built into the question is additional information.	FA↑,X	GI,DM,DD
131.		And this is where we got hung up, you see..because you were yelling "yes! yes!" and I was yelling "no! no!"	F↑,EI↑,P↑	RP,DM,DE
132.	Class:	Laugh.	EI	AE
133.	Mr. C:	and all this kind of business. And both of us didn't look at the question. And the question provides information which can't be denied. Now why does this thing change?	X,F↑	GI,DM,DD

Segment Summary
Mr. C: X,F↑,EI↑,P↑

			TAS	M - L
134.	Mr. C:	Even if we assume on the side of intelligence that it is a product of the material as you (to Mr. Wi) and Mr. Wr and probably a number of other people are suggesting, that is a reasonable argument.	X,SA	AC,DM,DE
135.		But somehow or other..however you want to attack the anti-social bit, you have to somehow or other bring the environment in somewhere (emphatically)	X,SA	GI,DM,DD
136.		unless you assume a genetically-determined difference in anti-social behavior completely independent of the environment.	X,SA	GI,DM,DE
137.		In other words, right from birth you've got to say..you've got to argue, that Negroes or Germans or anybody else who is racially..if I can use this term.. aggressive has this thing coming through genetically.	X,SA↑,EI	
138.		And that's a powerful assumption to make.	X,SA	GI,DM,DE
139.		So, does this..how does this sit with you, Mr. Wi?	F	MT,DM,AE
140.		I'm talking to you because we've been talking. Now I'm sure that you're speaking for a lot of people too	F,FA↓	
141.	Mr. Wi:	I agree	F,FA	
142.	Mr. C:	so I'm not singling you out.	FA↓,F	RP,DM,AE
143.	Mr. Wi:	I agree with you on that..I think that the only part of it that would be environmental..that would have to be stated as environmental..would be the part about anti-social behavior..	X,FA	RS,AC,DM
144.	Mr. C:	So..there would have to be in approaching the problem some reference to this kind of interaction.	X,FA,SA↑	AC,DM,DE

Segment Summary
Mr. C: X,FA,SA↑,EI,F
Mr. Wi: X,FA

			TAS	M - L
145.	Mr. C:	I guess..you know what concerned me...it wasn't so much the fact that the genetic argument came through..but that we missed this part..both of us, not just you but me..we ignored it completely.	F↑,EI↑, P↑,FA↓, X↓	RP,IN,DE
146.		We got wrapped up in yelling down at each other. You know..	P	GI,IN,AE, DE
147.		and I get the feeling that what was going on was more than just dealing with the question.	F	
148.		You know..some of you people are annoyed with something..Now it's either me, or it's the course, or it's the classroom or something.. and I felt this is what was coming through.	F↑,EI,P	
149.		And I'd like to hear about it. I mean I'd like to know, you know.	F,P	MT,IN,DE
150.		If you want to discuss it this is the place to do it.	P↓,F	IN,DE
151.		Uhm..I got the feeling there was an undercurrent..because I got sucked into it..if you know what I mean.	F,P	MA,IN,DE
152.		And I was getting mad..you know. I was getting angry. You know.. what's coming off here? It was a personal argument rather than an argument about..or a discussion about..now..what's the right answer to this question.	P,F↑,EI	

			TAS	M - L
145.	Mr. C:	I guess..you know what concerned me...it wasn't so much the fact that the genetic argument came through..but that we missed this part..both of us, not just you but me..we ignored it completely.	F↑,EI↑, P↑,FA↓, X↓	RP,IN,DE
146.		We got wrapped up in yelling down at each other. You know..	P	GI,IN,AE, DE
147.		and I get the feeling that what was going on was more than just dealing with the question.	F	
148.		You know..some of you people are annoyed with something..Now it's either me, or it's the course, or it's the classroom or something.. and I felt this is what was coming through.	F↑,EI,P	
149.		And I'd like to hear about it. I mean I'd like to know, you know.	F,P	MT,IN,DE
150.		If you want to discuss it this is the place to do it.	P↓,F	IN,DE
151.		Uhm..I got the feeling there was an undercurrent..because I got sucked into it..if you know what I mean.	F,P	MA,IN,DE
152.		And I was getting mad..you know. I was getting angry. You know.. what's coming off here? It was a personal argument rather than an argument about..or a discussion about..now..what's the right answer to this question.	P,F↑,EI	

			TAS	M - L
153.		I don't know if you had that feeling, but I had that feeling..and that feeling bothered me..you know.. about myself.	F↑,P	
154.		And I was getting mad. I felt like going up there and saying, "O.K., Wi and the rest of you, let's put the gloves on..you know..enough of this business."	FA↓,F, EI,P	MA,DM,AE
155.	Class:	Laugh.	EI,P	AE
156.	Mr. C:	Did that feeling sort of..I mean.. was this part of what some of you people felt as well..or..?	F↑	AC,IN,AE
157.	Mr. Wi:	I was just trying to pick up a few extra points.	-FA,-F↓ -P↓,-EI↓	GI,RP,DN, AD,DD
158.	Class:	Laugh.	-FA	AE
159.	Mr. C:	So what..(smiling) you were sort of annoyed at my not giving them, in terms of getting the two points. Was this the...	FA↓,F↑	RP,DM,AE
160.	Mr. Wi:	No, I was just trying to see if I could persuade you the other way.. that's all.	-F↓,-FA, -SA↓	RS,DN,DE
161.	Class:	Laugh.		AE
162.	Mr. Wi:	At least to see my viewpoint.	-FA↓,-F↑	RS,RP,DN, AD,DD

Segment Summary

Mr. C: FA↓,F↑, P↑, EI
Mr. Wi: -FA,-F↓, -P↓

In the first segment, Mr. C prepares to embark on a major facilitative effort aimed at Mr. Wi. Two aspects of the preparatory phase should be noted. First, by lining up a group of supportive students, Mr. C has at least temporarily isolated Mr. Wi, a condition which could generate enough tension to induce receptivity, if not a change on Mr. Wi's position. Second, we see Mr. C attempting to again clearly define the antagonism between him and Mr. Wi as a more personal problem which is a product of their relationship, and not as some intellectual disagreement over a substantive question.

The stage being set, and the actors identified, Mr. C begins a very patient facilitative push by showing his own sense of frustration and being trapped, as well as his feelings of annoyance and anger at what had occurred up until this point between him and Mr. Wi.

In spite of the risk he is taking, and the amount of anger he expresses, Mr. C seems to be approaching Mr. Wi in a rather gingerly and delicate manner. This is especially evident if we compare this confrontation with the intense and heated one which occurs in acts 301 to 360.

By using his own feelings in the service of facilitation, Mr. C is essentially calling for a reciprocal sharing on Mr. Wi's part and hopefully some understanding and resolution of the issues between them. Mr. Wi's response is not really very helpful in unfreezing their relationship. His rather innocent tone suggests that he is willing to acknowledge nothing more than the fact that he is engaged in an ancient and traditional game which has gone on for centuries between students and teachers. But at least one issue between them is out in the open. Mr. Wi's message can be translated as follows: "You are a formal authority and I experience you as very intrusive and discomforting; therefore I shall harras you and nip and pick at your outer perimeter every time I have the opportunity." A fuming, but undeclared state of war continues to exist.

		TAS	M - L
163. Mr. C:	Was this..uhm..did a couple of other people in the class feel there was a bit more sort of than just a kind of anger that we're sort of describing.	F	DM
164.	You know..like him pushing and me holding and me getting angry and him getting a little annoyed..and this kind of thing.	F,P,EI	
165.	Was this a common experience? Or is this something that I'm just reading into it? Yeah...	F,P	GI,DM,AE
166. Miss Sr:	Well I don't feel like..I didn't get the idea at all.	-F↓,-P↓	RS,RP,CD, AD,DD
167.	I seemed to feel that it was like you read about some people leaning more toward..like toward the genetic interpretation and others toward the environment and I just had the feeling that, you know it, started to separate out the people you know that were..more leaning to one a little bit more...	-X↑	RP,CD,AE

			TAS	M - L
168.	Mr. C:	Any other comments on this?	X↓,F↑	DM
169.		So you're arguing that it was sort of an intellectual kind of separation, in terms of people taking different positions.	F	
170.		Mr. Sz there was a note of recognition or smile on your face. Would you like to share that thought with us?	FA,F,EI	GI,RP,DM, DD
171.	Mr. Sz:	No, I just thought..	-F↓	RS,CD,AE
172.	Mr. C:	If you don't want to you don't have to; I'm not trying to push you.	FA↓,F↑, EI	DM
173.	Mr. Sz:	I just thought it was a good argument. I like to sit back and listen to it.	-F↓,EI	WI,DN,AD
174.	Class:	Laugh (loud)	-FA,EI	AE
175.	Mr. C:	Did you feel like getting in there and pitching?	F,EI	GI,DM,AE
176.	Mr. Sz:	No. I want to stay on the sidelines.	-F↓,-EI↓	WI,AD
177.	Mr. C:	How many of you wanted to get in there and pitch but sort of just held back?	F,EI	GI,DM,AE
178.	Class:	Silence.	-F↓,-EI↓	WI
179.	Mr. C:	No takers...	EI,P	GI,DM,AE
180.	Class:	Laugh.	-EI	AE

Segment Summary

Mr. C: FA↓,F,EI

Miss Sr: } -F↓,EI,-P↓
Mr. Sz: }

			TAS	M - L
181.	Mr. C:	It's awfully hard to attack a teacher then I guess. Is this the message the comes through?	F ,FA , EI,P	RP,IN,AD, DD

			TAS	M - L
182.	Mr. C:	Yes, Mr. Mo.	FA,F↑	DM
183.	Mr. Mo:	Well, it's sort of like fighting City Hall.	-FA,F	MA,AC,DN, AE,DE
184.		I mean you made up the test and I don't like to argue because usually you..you've got an answer which is in your mind; like 'that's what the good argument was' and normally a teacher won't change his mind.	-FA,-P↓,F	GI,DN,DE
185.	Mr. C:	How about that number five? (referring to the test item)	FA↓,P↑	GI,IN,DD
186.	Mr. Mo:	although that number 5...that was an exception..that number 5 was an exception.	-FA,-P	RP,DN,DE
187.		But most of the time you can't fight.. I mean, a multiple choice you couldn't fight at all. There's nothing too much you can do.	-FA,-P, -F↓	DN,AE,DE
188.		And also, you get the feeling that you..you hate...hate to change your mind anyways. It's sort of saying that 'well I goofed,'...and I think that's along where the big argument came in..the big fight came in.	FA,-EI,-P	GI,IN,AE
189.		But I don't know..maybe you don't... maybe you don't feel that way but I think..you know..you sort of hated to say 'well, maybe there was more than one answer.	-FA,-P	RP,DN,AE
190.		You tried to make a test where there's only one answer.	-FA	GI,CD
191.	Mr. C:	Right.	FA	
192.	Miss Sr:	I'm not sure that it's so much changing your mind as that the questions you asked and the answers you expected back on them were kind of the way that you've been gearing the course in the last couple of weeks anyway.	+FA	AC,DN

			TAS	M - L
193.	Miss Sr:	And it wasn't a question of right or wrong. It was just that..you know..this was what you had explained to us and..uh..unless anyone had done real extensive reading on their own and..you know..had come up with a complete opposite viewpoint which I think you would have accepted if they had had enough to support it.	X,+SA,FA	AC,IN,AD
194.		It was just that I don't think.. maybe..oh maybe one question would be better than another but just the fact that this is how you had been gearing the course..and what you had provided us with..and it's not that you have to change your mind and that we try to get you to change your mind.	+FA,P	AC,DN
195.	Mr. C:	So there's a little bit of rigidity coming through. Uhm..said very nicely, but a little bit of rigidity coming through on my part.	EI,X↓, FA↓,F,P↑	AC,DN,DE
196.	Class:	Laugh.	EI,P	AE
197.	Mr. C:	Is this sort of general..uhm.. feeling or is this a consistent kind of thing. You know, like we hold the fort regardless of what happens. I don't know,	F,EI,P	GI,IN,DE
198.		Mr. Mo, you're shaking your head. This is how it comes to you?	FA,F	DM
199.	Mr. Mo:	By rigidity you mean that..uh.. you're..what you're telling us in class is....	FA,F	DN,AE
200.	Mr. C:	The Law. You know..it's the Ten Commandments, follow those.	FA↓,F	GI,IN,DE
201.	Mr. Mo:	I get that somewhat but I...	-FA,F	GI,DN,AE
202.		Now when I think about it, it would have to be that way somewhat. Because you're our teacher...	+FA	RP,DN,DE

			TAS	M - L
203.	Mr. Mo:	where if we use our own..alot of those questions could have been answered by..you know..'well let me think it out' and what we had before we came into the course..	-X↑,FA -F↓	
204.		If we're actually going to get anything out of this course I think we'd have to follow close to what.. the way you..your plan of thinking on different questions.	+FA,-F↓	AC,DN,AE
205.	Mr. C:	Uh huh. Miss Jt.	FA,F	DM
206.	Miss Jt:	Well, I don't get that impression at all. I think that it's completely open..on the exam, especially..just draw from your past knowledge almost entirely, I thought.	+FA,+F	AC,DN
207.		And anyway, in our class discussions it was pretty open. I mean you weren't saying 'this is it.' I didn't get that impression at all.	+EI,+FA, +F	MT,IN
208.	Mr. C:	Um..we have a disagreement. Mr. Mo, you disagree with Miss Jt.	FA,F↑	GI,IN,DD
209.	Mr. Mo:	Well..well..when you say past knowledge we're..this is Psychology 101 and we can't draw from our past knowledge of before..uhm..our opinions maybe.	-X↑,-FA↑, -F↓	RS,DN,DE
210.		But our opinions must have been geared toward what was..what..toward Psychology 101.	-FA↑,-X↑, -F↓	DN,AE
211.	Miss Jt:	I know. If we have some intelligence our opinions are backed up already, aren't they?	+SA,+F	MT,IN,SE
212.	Mr. Mo:	Uh..Well, we have a..we have an insight to it but I think that the opinions should be developed in the course and what the way to think... in the way I mean..the right..the thing about the right way to handle it.	-X↑,-F↓, -FA↑	GI,DN,DE

		TAS	M - L
213. Mr. Mo:	I don't think I had too much insight into it..the question on the test before I came in here. I think from past knowledge I don't think I had..to answer the questions the way you wanted them as we got them in class.	-X↑,-FA↑, -F↓,-SA↑	DN,DE

Segment Summary

Mr. C: F↑,FA↓,EI,P

Mr. Mo: -FA,-F↓,-P,-X↑

Miss Sr } +FA,+EI,+SA,+F
Miss Jt }

Mr. C opens again with a facilitative call for other students to share their reactions in dealing with him as a formal authority. Miss Sr. and Mr. Mo's responses are of interest. Their styles of coping with Mr. C are representative of those which teachers encounter very frequently.

Miss Sr's activity, centered in acts 166 and 167, as well as acts 192 to 194, suggest a fairly consistent trend of validating and supporting Mr. C as an expert, formal authority and socializing agent, while rejecting his funcioning as a facilitator and a person. This is very much what one would expect from a task-oriented but "typical" college student, who is most comfortable in a more traditional class structure. Miss Sr does the reading assignments, hands in her papers on time, and she has a very clear understanding of Mr. C's cognitive goals and expectations. She wants him to remain somewhat distant, in control, and to dispense not only expertise, but rewards as well. She is a loyal, supportive student, who works quite hard to achieve the goals of the course as outlined by the teacher and she relies quite heavily on his standards for judgements about her performance. Miss Sr is neither competitive nor rebellious; nor is she very innovative or capable of transferring the materials and ideas she has ingested beyond the context of the immediate learning setting. Her loyalty, support and capacity to do what she is told make Miss Sr quite easy to deal with, but at the same time she can be rather bland and unexciting as a human being.

Mr. Mo is much more dissatisfied with his relationship to Mr. C especially as a formal authority. Angry, anxious, dependent, depressed and lacking a sense of real inner resources, Mr. Mo smolders, but cannot resist or challenge the rulings of "City Hall"; he also becomes very tense and scared when others do. Needing desparately to please and be liked by authority figures, he is preoccupied with grades, and his fears of being evaluated. He identifies with the standards of relevant authority figures, but is rarely able to meet them. Unable to really evaluate his own performance , he relies heavily on the evaluations of his teacher. Since he is not very bright he has equated good grades with being liked and supported by the teacher, and since he suffers from low self-esteem, he frequently finds himself in the position of attempting to guilt-induce a teacher into giving him a better grade than the teacher, and probably he, feels he deserves. In this class, Mr. Mo came very close to being experienced by Mr. C as a "grade grubber".

Mr. Mo is probably the most extreme example of a substantial member of Mr. C's students whose style of functioning is characterized by the above. It should also be clear that Mr. C's facilitative effort with respect to Mr. Mo was somewhat effective in conveying a sense of the problem, but it certainly did not achieve any major breakthrough. Mr. Mo's need for support and love are so powerful that fulfilling them is an unending task, one that Mr. C couldn't possibly undertake or refuse to embark on.

			TAS	M - L
214.	Mr. C:	Mr. Wi	FA,F↑	DM
215.	Mr. Wi:	I think some of the readings stimulate your own ideas, and from this reading maybe you'll disagree with some of the things you'll read..I mean it's part of Psych 101.. Psychology 101 too if while you're reading this stimulates other ideas. I think you should be able to bring these in too.	-FA,-F↑	MA,RP,IN, DD

Segment Summary
Mr. C: FA,F↑
Mr. Wi: -FA,-F↑

			TAS	M - L
216.	Mr. Mi:	Well, when I encountered the question I worried for a while whether we were supposed to include the stuff that we had read or not in answering..because if you had...	-FA,-F↓	RS,RP,DN, AE,DE
217.		well..from what we've read the difference in intelligence might be two or three I.Q. points if you move the social class and environment close together...	-X,-FA	DE
218.		and so I sort of felt that we couldn't use that..that's what we've learned in our reading... that they can't show that there's any difference, or the difference was small.	X,-FA	RS,IM,DE
219.	Mr. C:	You felt that the consensus of what you had read led to the conclusion that if you hold environment constant then the differences which are usually quite great fall down to the point where you could say it's due to some kind of chance error and not really any meaningful kind of thing.	F,X↑	DM

			TAS	M - L
220.	Mr. Mi:	Yeah..or even if there is a difference it could cause the effect that is suggested in the question, that's a very large difference.	X	RS,DN,DE
221.	Mr. C:	Mr. Wr	FA	DM
222.	Mr. Wr:	I think..I think the whole thing comes from the question because actually you asked for three plausible reasons and it all boils down to the fact that the only difference between the whites and the Negroes is that the Negroes are discrim...discriminated against... and	FA,-X, SA	RS,CD
223.		uhm..you know..and that's where the whole difference comes in.	X	
224.		Maybe, like one reason would be..uh.. say they were discriminated..uh.. before the child was born and the mother had a rough treatment..and you could say well they had..he had..he was disc...the, the Negro hospitals are worse and uhm..the child was born with more brain damage.	X,SA	AC,DN,AE, DE
225.		Or, the Negro teachers are worse; but it all boils down to the same thing: that they're discriminated against. But..	-FA,X, SA	
226.		You know, I mean..it doesn't seem like..	-FA,X	
227.		I really don't think it's a very good question. Because uh..because I think it's all three examples of one thing.	-FA	MA,MT
228.		The way I see it..you know what I mean?	-F↑	
229.		because I don't see where..heredity vs. environment comes in..it's all discrimination.	-FA,X	RS,AC,CD

			TAS	M - L
230.	Mr. C:	But Mr. Wi disagrees quite strongly. You see, he interprets the question to the effect that genetics can play..uh very strong part.	FA,F↑	GI,DN,DD
231.	Mr. Wr:	You know..that's the whole thing.. I put down..uh..two answers..what I said about discrimination is.. that..well..another one is..you know..no good so I'll just..well maybe it's due to heredity, 'cause it's it's..	F,-FA	GI,AC,CD, DD
232.		and that's another thing, the word 'plausible' is really a bad word because I mean most anything is plausible.	-FA	RS,AC
233.	Mr. C:	Mr. Mi.	FA	DM
234.	Mr. Mi:	Well, when I put down my three answers I made them all according to environment but I can see how if you really wanted to pick it apart you could say they were all the same answer, just worded differently and I was really hurting for different reasons.	-X,F, -FA	RS,AC,DN, AE,DE

Segment Summary
Mr. C: FA,X,F
Mr. Wr: -FA,X,SA
Mr. Mi: -X,-FA

Mr. Wi opens this segment by dissociating himself from the previous feelings expressed by Mr. Mo. In a very counter dependent and mildly challenging tone he indicates that he will bring in his own thoughts, whether or not they are acceptable to Mr. C.

Both Mr. Mi and Mr. Wr respond to Mr. Wi's expression of dissatisfaction with Mr. C as a formal authority, by noting the difficulties they had in just answering the question. Their dissatisfaction stems from their contention that Mr. C's expectations could not be clearly understood from the question. Their disagreement appears much less personally directed than was Mr. Mo's and to a considerable extent, they are validating the main theme Mr. C has been harping on as a socializing agent.

Mr. Mi is a member of the same cluster of students as Mr. Wr and Mr. Br; that is, the working rebels. Mr. Mi's uniqueness within this cluster is that compared to Mr. Wr, his participation was very low. Being very capable, creative and introspective, he had no trouble handling the demands of the course and he spent most of his time in private work and contemplation. Consequently, he was very much a loner in the class and his contributions, when he made them, revealed very little about himself. Beyond the obvious fact that he had been reading and working, and that he would challengingly stand up to Mr. C as an expert and as a formal authority Mr. Mi remained an unknown entity to most members of the class, including Mr. C.

			TAS	M - L
235.	Mr. C:	This is what happened to you, Miss Sg (mispronounces name) as well? Miss Sg have I mispronounced your name, Miss Sg?	FA,F↑	MT,DM,AE
236.		What is your name?	P↑	
237.	Class:	Laugh.	P	AE
238.	Miss Sg:	Sg	FA,P	MT,DM,AE
239.	Mr. C:	Miss Sg (incorrect form again) No wonder I haven't been getting to you.	F,P↑	MT,CD,DE
240.	Class:	Laugh.	F,P	
241.	Mr. C:	My original association to your name was..sure,was Sg (incorrect form). Isn't that strange. O.K.	P	
242.		I'm sorry; I apologize.	P↑	RP,CD,DE
243.		You were shaking your head there and I..you were shaking your head in sort of agreement with what Mr.... is this the sort of a feeling that you had about it then?	FA,F↑	AC,DM,AE
244.	Miss Sg:	Yeah, I think there was one interpretation of the answer and it was just 'try to find three different ways of saying that it was all due to environment.'	-FA,F	AC,DN,AE

Segment Summary
Mr.C: FA,F↑,P↑
Miss Sg: -FA,F

For some time Mr. C had been interested in hearing from Miss Sg. She had taken the liberty of informing him a number of weeks earlier that she would be absent from class while she joined a freedom group that was going to Selma, Alabama. Upon her return Miss Sg neither volunteered to talk about her experiences nor did she do so upon Mr. C's request. Mr. C seemed to be using his actual mispronouncing of Miss Sg's name to get closer to her in order to draw her out. Although there is some suggestion of discomfort on her part with Mr. C as a formal authority and she was anxious about defining a role for herself as a female in the class, the reasons behind her relative inactivity and rather low participation remain unclear.

			TAS	M - L
245.	Mr. C:	Umhmm. All right, Mr. Ag.	FA	DM
246.	Mr. Ag:	I think that you..I don't think that you really can say that because see..there are different factors in environment and they weren't just.. it's all environment and blocked together it's..	FA,X,SA	AC,DN,DD
247.		There is one specific fact for instance pre-natal factors and... then there's ah...the social role that which he's supposed to portray and so forth. There's... entirely separate answers and I think there were more than three.	+FA,X, SA	
248.	Mr. C:	Um..I think I follow your conclusion..your point to its logical conclusion. You're saying that under some circumstances one aspect of this environment may be the crucial kind of thing.	X,SA,F	AC,DM,DD
249.		You know, it could be that everything you're picking up is the result of pre-natal difficulties or everything you're picking up is the result of a very harsh kind of discrimination, or it may be a combination, or interaction of a variety of things.	X,SA	

Segment Summary
Mr. C: X,SA,F
Mr. Ag: +FA,X,SA

			TAS	M - L
250.		Yeah, that's on the environmental side of the coin. That's a reasonable interpretation of the environmental side of the coin.	SA	AC,DM

			TAS	M - L
251.	Mr. Wr:	Well..I mean that's all right what he said but the whole difference is due to discrimination.. that's the only difference.. that's why you used Negroes and whites: because that's the only difference between them..except that one is treated inferiorly.. and uh..because they're treated inferiorly there's a difference that of all through life..and just....	X,SA, -FA	RS,CD,DD
252.		You know what I mean?	-FA,F	
253.		they get worse treatment all along.	SA	
254.		Do you see..what I'm saying that.. a..that the whole thing is that.. there's discrimination and all you have to do is pick out three examples of where..of where..a..a Negro child would get a worse deal than a white child.	-FA,F↑	GI,DN,AE
255.	Mr. C:	All right. This is a..uhm..statement in the sense of the central issue along the envrionmental side because all the other environmental issues that arise, have something to do with this kind of thing. I think I would..uh..	X,F	AC,DM,DE
256.	Mr. Wr:	Th-Th-That way you're saying that..uh.. all difference is due to environment.. 100% of it.	-FA,X	RS,CD
257.	Mr. C:	Well..uh...	FA,P	DM,AE
258.	Mr. Wr:	Because like when the..when the.. like I said before the child's born..you know..	-FA,-P↓	GI,DN,DE
259.		or while the child's being born the mother's going to get worse treatment..because she's going to be coming from a worse hospital..and it's all..it all goes back to discrimination.	X	

Segment Summary
Mr. C: X,F
Mr. Wr: -FA,X,SA,-F↑

Like Mr. Rn, who was introduced in Act 125, Mr. Ag is another very intelligent engineering student who is surprisingly confident and secure in this class. In his brief comments, he displays considerable independence of mind by rejecting the argument, put forward by some of his most rebellious classmates. His validation of Mr. C's functioning as an expert and socializing agent and his favorable response to him as a formal authority are not only supportive, but also suggest that he felt pretty good about his relationship with Mr. C.

Mr. Wr immediately enters on the scene, adknowledges Mr. Ag's right to view the question and Mr. C in such a manner, and then again challenges Mr. C as a formal authority. Mr. Wr takes as his starting point Mr. C's seeming acceptance of a total environmental interpretation. He then tries to coerce Mr. C into acknowledging that only one answer, that it all goes back to discrimination is possible. He is so intent on forcing Mr. C to accept his position that Mr. Wr is either unable to see or unwilling to explore the fact that his position is not that far from Mr. C's, and that as an expert and socializing agent Mr. C has only been trying to encourage Mr. Wr to think harder about what discrimination means, and to begin to explore some of the mechanisms by which the effects of discrimination are mediated. Mr. Wr resists Mr. C on this until the very end of this session (acts 368 to 466) where he sort of challengingly asks Mr. C for three correct answers.

			TAS	M - L
260.	Mr. C:	Well..go ahead Mr. Wi.	FA	DM
261.	Mr. Wi:	Well, this may be a little far out.	FA	RP,DN
262.	Mr. C:	Go ahead, try it.	FA,F,EI	DM
263.	Mr. Wi:	The only reason that he is being discriminated against is because of his heredity..	-SA↓,-F↓	RS,CD,DD
264.		and couldn't you use..because of his Negro heredity..and couldn't you use this to go on farther and say that perhaps that this is the reason that he's anti-social... because of his heredity?	-SA↓	
265.	Mr. Mi:	But we know it isn't true because they were brought in from Africa and made slaves and they were taken from their environment and made slaves and..they were lib..liber	X,SA	AC,DN,DE
266.	Mr. C:	Liberated.	FA	DM
267.	Mr. Mi:	liberated..and there's alot of prejudice against them, right?	X,SA	AC,DN,DE

			TAS	M - L
268.	Mr. Wi:	Yeah..but today a person walks in the door and if he's Negro he's discriminated against... discriminated against solely on account of his heredity.	-SA↓	RS,CD,DD
269.	Miss Sg:	Well the color of his skin is influential.	X,SA	AC,DN
270.	Mr. Wi:	Well, the color of his skin is part of his heredity.	X,-FA, -SA↓	RS,CD,DD
271.	Class:	Laugh.	-FA	AE
272.	Mr. Wi:	And therefore because of..it's because of his heredity that he later becomes anti-social. Because he's discriminated against.	X,-SA↓	RS,CD
273.	Miss Jt:	That's environment.	X,+SA	AC,IN
274.	Mr. C:	Go on..speak up any time you like (to Ag who has his hand up)	F↑	GI,DM
275.	Mr. Ag:	Ah..I think that..well..it can be because of his heredity that he's discriminated against but it's by his environment. This environment is the means through which he is discriminate..discriminated.	X,+SA	AC,DN
276.	Mr. Wi:	But still the basic cause is..I mean..if his heredity was different there wouldn't be any environment to affect him...	X,-SA	RS,CD
277.	Mr. Ag:	Well if he had no environmental influences in regard to his heredity, his heredity wouldn't make that much difference. It's his social role which is environmental.	X,SA	AC,DN
278.	Mr. Wi:	I agree with everything he said (to Mr. C).	FA,SA	RS,AC,DN
279.		It's..but it all traces back to his heredity though.	-FA↓,-SA↓	RS,CD,DD
280.	Mr. C:	Where do we go?	FA↓,F↑,P	MT,CD,DE

			TAS	M - L
281.	Class:	Laugh.	FA,P	AE

Segment Summary

Mr. C:	FA,F↑,SA,P
Mr. Wi:	X,-SA ,-FA↓
Mr. Mi Miss Sg Mr. Ag Miss Jt	X,+SA

Mr. Wi very coyly steps to the center of the stage. He subtly warns his audience that they might not like his lines, which leads to their encouraging him to go on. One has the feeling that he has shifted the responsibility for his performance onto his audience, in this case Mr. C, consequently leaving himself an out. That is, one can anticipate his saying at the end of his monologue "Well, I told you that you would not like it." One also senses this quality of disowning responsibility in his approach to the problem of discrimination. In this case, because it is the Negro's heredity which determines his skin color, which in turn serves as a cue for discrimination, discrimination is the Negro's (his genes' really) problem. Mr. Mi, Mr. Ag, Miss Sg and Miss Jt all attempt to have him realize that the external environment, that is, other people, are the ones who make the decision to discriminate or not, on the basis of skin color. As a facilitator in relation to Mr. Wi, among other things Mr. C has been concerned with having Mr. Wi clarify for himself and having him own the extent to which his feelings about Negros influence his arguments and positions. In act 278 Mr. Wi indicates his acceptance of the main thrust of the arguments presented by the other students, but in the same breath he rejects them. Mr. C recognizes that his facilitative and socializing efforts with Mr. Wi have been relatively unsuccessful, and one can just envision him throwing up his hands in despair and calling for help from the rest of the class in act 280. The events of this segment will form the staging area from which Mr. C will launch a major offensive in the acts 301 to 360.

			TAS	M - L
282.	Miss Sr:	It's based pretty strongly on our scale of what's superior and what's inferior.	SA	AC,DN,DD
283.		I mean, you know..like we were saying if you gave..you know..maybe some of our I.Q. tests to say someone from China, that they would come out differently just because their whole way of thinking is different..and this might be part of it. I mean, it's our standards, it's our tests that we're administering.	X,SA,FA	

			TAS	M - L
284.	Mr. C:	Let's follow that point a little further.	X,FA, F,SA	AC,DM
285.		This is part, again, that you're pointing out Miss Sr..it's part of the environmental thing..in the particular test situation where there's a built-in bias.	X,SA,F	DM
286.		In other words you know..over and above the fact that the test is written in English rather than Chinese (humorously)	X,EI	DM,DD
287.	Class:	Laugh. (loud and long)		AE,DD
288.	Mr. C:	Clearly it's not an experience that a..that a Chinese had and that really taps what is functional intelligence from their point of view. Well, let's look at it this way,	X,SA	DM,DE
289.		all right, go on Mr. Br.	FA	DM
290.	Mr. Br:	Uhm..I think..uh..I agree with her	X,+SA	AC,DN
291.		because..a..I had a teacher from England once in Canada who uh.. a..taught the way they do in England and..especially in our math test..uh..if you get an American teacher you're pretty well assured that you're going to get something without tricks, 80% of the time.. whereas in England every question those kids get have a trick in it.	-FA	GI,DN,AE
292.		And so I think they just get an entirely different way of looking at a question..looking for something to catch them up rather than some basic principle to apply. I think you can apply that to an I.Q.test.	-FA,X	
293.	Mr. C:	Yes, Mr. Mk, you were up before.	FA,F	DM

			TAS	M - L
294.	Mr. Mk:	But in the question you stated to us that the I.Q.s were actually different, didn't you? You said nothing about tests so we just had to take it from you that you took all these things into consideration and gave us the correct...	-FA	RS,CD
295.	Mr. C:	No..all I stated..all the item stated was that the school performance and the anti-social behavior differed, uhm..social class, sex, and age were controlled for, and these differences increased with grade or age...	FA↑,X	GI,DM,DE
296.		The older the kid got, the worse off the Negroes got vis-a-vis the whites in terms of performance and in terms of anti-social behavior..they had poorer performance and were more anti-social behavior.	X	
297.	Mr. Mk:	So we're talking now about the ability of the Negro to adapt himself to a certain way of conducting class or taking a test.	X,F	RS,CD
298.	Mr. C:	This might be..part of it..	X	AC,DM,DE
299.		this is the suggestion that Mr. Br is coming up with is that coming from a certain kind of environment..	X,F	DM,DE
300.		that is, being a minority group or being a member of a lower class as well, has certain built-in kind of experiences that may not be tapped on an I.Q. test or school performance than if you're coming from a middle class environment or coming from an English environment or Canadian environment..may not train you for the kinds of things that you're being tapped on.	X,SA↑	

Segment Summary

Mr. C: X,FA,SA↑,EI
Miss Sr: X,SA
Mr. Br: X,-FA,SA,F
Mr. Mk:

Mr. C's exasperated plea triggers responses from a rather unusual assortment of students. We have already met Miss Sr in act 192 and her validation of Mr. C as an expert, socializing agent and formal authority here is quite consistent with her earlier loyal, supportive, task-oriented and compliant style.

Mr. Br also validates Mr. C's functioning as an expert and socializing agent, but at the same time we note a symbolic undertone of anger and mistrust towards teachers who function as tricky formal authorities. This fusion of work and rebellion, or of contention, challenge and enactment in factor terms, formed the basis of that heroic cluster of students which we labelled earlier as working-rebels. Along with Mr. Br, this group includes Mr. Wr and Mr. Mi. Mr. Br's reference to Canada is an interesting attempt to establish a momentary colleagueal relationship with Mr. C, since both of them are Canadians.

Mr. Mk's rather deliberate attack on Mr. C as a formal authority in act 294, sounds similar to the kind of unprovoked harassment one would expect from Mr. Wi. Mr. Mk and Mr. Wi do share many characteristics in common, and these are the two students in Mr. C's class that make up the non-working rebellious cluster of students.

			TAS	M - L
301.	(CY:)	Let's carry Mr. Wi's point and..or was it suggested by Mr. Ag..a little further.	F↑,FA	DM
302.		That is..there is a genetically determined color difference and this is what the environment responds to, so this is genetic kind of..if I'm interpreting your point correctly? This is a genetic kind ofinterpretation.	X,F	
303.		Well..uhm..let us...uhm...raise the question of a similar kind of differentiation that takes place..uhm..in..uhm..uhm..in a different kind of situation.	X,F	DM,DE
304.		Uhm..yeah go on (to Mr. Mo)	F,FA	DM
305.	Mr. Mo:	No, I didn't have anything.	-F↓	WI,DE
306.	Mr. C:	O.K. How many of you have seen the film "Exodus"?	FA	

			TAS	M - L
307.	Mr. C:	All right, you know that in that "Exodus" there is a scene in which..a..Paul Newman is..a.. approached by Peter Lawford, I think it is, uhm..in which Lawford is communicating certain opinions about..uhm..the nature of a..a..differences between..uh..Jewish individuals and non-Jewish individuals, and that he can differentiate a Jew from a non-Jew on the basis of very subtle kinds of criteria.	X,P	GI,DM,AE, DE
308.		And in the film this is very different, I mean it's played up very big, obviously.	P↑,FA↓	RP,CD,DE
309.		But..uh..here is Paul Newman dressed in a British Army officer's uniform. He also happens to be the leader of the particular terrorist movement.. uh..the Israeli terrorist movement. And..uh..he is conning Peter Lawford out of trucks and some other stuff, and it's very clear that..uhm..Lawford is not aware of the fact that he is looking..	P,FA	GI,DM,DE
310.		Uhm..well, in fact what Newman does to..magnify this thing..he says 'gees, you know I have something in my eye here. Would you care to look in my eye?'	P,EI	MA,DD
311.		Now supposedly Lawford can sniff out a..a..some Jewish individual just by looking at him..and..uh.. you know the whole impact is.. you know..this poor prejudiced bastard and this kind of thing.	P,EI	GI,DM,DE
312.	Class:	Laugh.	-P	

Segment Summary
Mr. C: F↑, P↑, FA, EI

			TAS	M - L
313.	Mr. C:	Uhm..but..uh..and also, I don't know..is this uh..let me raise another question.	P↓,X↑,FA	MA,DM,DD
314.		Why was it so necessary..uhm..during the war..uh..to have..uh..Jewish individuals walk around with identifying signs in terms of arm bands and this kind of thing?	X,P,FA SA	GI,DM,AE, DD
315.	Class:	Silence	-SA↓,-P↓	WI,AE
316.	Mr. C:	Now..you see if the difference in because the pattern of discrimination that we're talking about is a very similar one, in many ways. And..you know when you do move into various situations where..uh..you do get a hot kind of discrimination all across the board then it goes against minority groups in a similar manner at times..	X,P↑	GI,DM,AE, DE
317.		But it varies obviously because the thing is very complicated.	X,F	RP,CD,DE
318.		But why were these symbols necessary?	X,F,SA	GI,DM,DE
319.	Mr. Wi:	They..	-SA	AE
320.	Mr. C:	Try to speak up.	FA,F↑	GI,DM,AE
321.	Mr. Wi:	They couldn't tell, they felt they wanted to know who the Jewish people were.	F,P,SA	RS,DM
322.	Mr. C:	That's right. They wanted to make sure that there were clear identifying signs.	X,D,SA↑	AC,DM
323.	Mr. Wi:	So that they could discriminate against them.	F,SA,X	AC,DN
324.	Mr. C:	That's right.	F,SA	DM
325.		So what role does the environment or the genetically-given signs play in a case of this kind?	X↑,F,SA	GI,DM,DD
326.	Mr. Wi:	Well, in that case the genetic difference isn't as noticeable.	-X↓,-F↓, -SA↓	MA,CD,DE

			TAS	M - L
327.	Mr. Wi:	I mean..I don't, I don't quite see what your..	-SA↓	WI,AE
328.	Mr. C:	Well, let's explore the thought. I think this is a good example. Let's see what kinds of things come up.	F↑,SA	RP,IM,AD, DD

Segment Summary

Mr. C: F↑,X↑,FA,SA ,P

Mr. Wi: -SA↓,-F↓

			TAS	M - L
329.	Mr. Ag:	Wouldn't the color of his skin.. of a Negro's..be the same as the arm band of the Jewish person?	+SA,+X, +F	AC,DN,AE
330.	Mr. C:	This is..it serves the same intention, I think.	F,SA	AC,DM
331.	Mr. Ag:	Well..I actually don't see any difference between the two. They're both signs on which the environment has to react.	F,SA	AC,DM,AE
332.	Mr. C:	It..are you suggesting that it's a sign that the environment grips on to and uses in terms of focusing whatever..the environment being the people and all things..whatever there is mobilized in the society to let go.	X,F,SA	AC,DM,AE
333.		Does this make a..a sensible kind of thing here? Does that fit? Does that broaden sort of the notion that you're suggesting? This is what I'm getting at, Mr. Wi.	F,SA↑	GI,DM
334.	Mr. Wi:	I..I don't see any relationship to what..it's just the same thing..I don't see any broadening of the notion.	-F,-SA↓	RS,CD
335.	Miss Sr:	Yeah..Aren't you saying well that it's partly genetic, partly environment I mean that one kind of starts up the other. I mean you can't say it's genetic just because a..you know..perhaps a Negro's black.	X,F,SA	AC,DN

			TAS	M - L
336.	Miss Sr:	That you know, therefore it's all genetic because of the way people react to him, because when..uhm.. I think it was a couple of weeks ago when we were standing in Angell Hall you were talking about Allen and the fact that it's an interaction between your heredity and your environment, and they kind of work pretty closely.	X,SA,EI	AC,DN

Segment Summary

Mr. C: X,F,SA

Mr. Ag: } X, SA, F
Miss Sr: }

Mr. Wi: -F,-SA↓

			TAS	M - L
337.	Mr. C:	I think we can clarify...	F↑,X	AC,DM
338.		see Mr. Wi what you're saying.. you see, you're labelling your position a genetic position and it's really not.	X,FA↑	GI,DM
339.	Mr. Wi:	Yeah..what I..what I was saying.. I don't believe this..I mean I was just bringing it out as a point that it it..you could.. that's why I said it was sort of way out.	FA,-F	RP,DN,AE, DD
340.		That you could point out and say that this person is ah..wouldn't be treated this way if it wasn't for his heredity.	SA,-P↑	RS,CD,DD
341.		But of course..I mean..it's reacted through his environment I think.	-FA,SA	RS,CD,DD
342.	Mr. C:	The words you used..let me quote you..'you wouldn't be treated this way unless it was because of his heredity.'	FA,F	GI,DD,DE
343.	Mr. Wi:	Yeah.	FA	AC
344.	Mr. C:	These are the key terms in interaction.	X	GI

			TAS	M - L
345.	Mr. Wi:	A person walks in this room.. comes in here..	SA,F	RS,CD
346.	Mr. C:	Right.	SA,F	AC
347.	Mr. Wi:	and sits down.	SA,F	RS,CD
348.	Mr. C:	Right.	SA,F	AC
349.	Mr. Wi:	And if he was white he'd be treated one way..but because his heredity is different he's treated another way.	X,-SA	RS,CD
350.	Mr. C:	That's right.	X,FA, SA↑,F↑	AC,DM,DD
351.	Mr. Wi:	And that..that was the whole issue.	-F↓,-X↑	RS,CD
352.	Mr. C:	Well..this you're describing beautifully, beautifully an interactional position.	X,SA,EI	RS,AC,DM, DE
353.		This is what interaction is..that given certain differences genetically, be it early or late maturing, be it..uh..Jewish characteristics versus non-Jewish characteristics, versus-a-given a Polish name versus non-Polish name, uhm..Negro skin versus white skin, ah..Chinese slanted eyes versus ah..American eye slanted eyes..whatever it is.	SA↑,EI↑	GI,AC,DM, DE
354.	Class:	Laugh.	EI,SA	AE
355.	Mr. C:	The environment responds differently to these different kinds of physical or biological givens, right?	X,SA, FA	RS,AC,DM, DD
356.	Mr. Wi:	Uhm.	X,SA,FA	AC,DE
357.	Mr. C:	And what you're describing is beautiful in the sense that that's an interactional position.	X,EI	GI,RD,DM, DD
358.	Mr. Wi:	O.K.	X,PA,EI	RS,AC,DD
359.	Miss Jt:	You won.	FA,EI,SA, P	AC,DN,DD

TAS	M - L
FA,EI,P	

360. Class: Laugh.

Segment Summary

Mr. C: F↑,FA, X, SA, EI
Mr. Wi: -F↓,X,FA,SA, EI
Miss Jt: FA, EI, SA, P

These four segments are probably the most intriguing and critical in this session. For we are given the opportunity of understanding at least in part, Mr. C's preoccupation with the issue of discrimination and why he has so much invested in confronting Mr. Wi. All along, Mr. C has provided us with a number of hints suggesting a connection between his concern with racial discrimination and hiw own Jewish identity. Recall for example, our earlier suggestion of his identification with Mr. Mn, the only Negro in his class, as well as his earlier affect-laden references to "Jewish blood" and instinctive German aggressiveness. Mr. C's earlier socialization and facilitative efforts were aimed at generating a more empathic approach to Negros and at complicating existing oversimplified stereotypes which exist in the eye of the beholder. Could it be that lurking behind this are similar aims with respect to Jews in general and to himself as a Jew in particular? We noted Mr. C's earlier preoccupation with dispelling his students' view of him as an impersonal, arbitrary formal authority. Whether his students were actually experiencing him in this manner or whether he was projecting some of his own feelings about his functioning as a formal authority onto them is irrelevant. The fact is that he believed that a number of students were experiencing pain, discomfort or anger with his functioning as a formal authority and he attempted to remedy this. Similarly it is not unreasonable to assume that he believed that some students, and probably Mr. Wi, may have been resisting his socialization efforts because of Mr. C's Jewish identity; again whether there is a basis in reality or whether Mr. Wi was the recipient of Mr. C's projections of his own ambivalent feeling about himself as a Jew is irrelevant. It is likely that Mr. C rather indirectly, yet blatantly, linked what he judged to be Mr. Wi's anti-Negro sentiments with latent anti-Semetic feelings as well. Thus, much of Mr. C's functioning as a person in acts 303 to 311 is characterized by a great deal of retallitory guilt-induction, a considerable amount of anxiety and reparation over the intensity of his feelings about this issue and a heavy cloak of depression as he encounters his feelings of powerlessness to effect any significant change. Yet with a burst of energy which frequently characterizes his functioning as an ego ideal, he gradually attempts to shift the focus by playing down the more personal implications and moving in the direction of the facilitator, expert, and socializing agent strategies. In acts 313 to 328, we observe this slow and possibly painful transition as well as Mr. Wi's reluctance or inability to accept Mr. C's functioning as a facilitator and socializing agent. In the next segment, however, Mr. C does receive a fair amount of validation from Mr. Ag and Miss Sr. They seem to be quite helpful not only in articulating a clear position, but in also providing Mr. C with a bridge back to Mr. Wi.

In acts 337 to 360 we seem to be observing a very unusual and somewhat confusing display. Behind Mr. C's renewed efforts as a socializing agent, facilitator, expert, and even as an ego ideal we find a great deal of resistance, guilt-induction and depression, fused with a fair amount of supportive acceptance. Mr. C is neither coddling Mr. Wi, nor does he seem to be pressuring him very hard. One has the feeling that Mr. Wi is being led, somewhat reluctantly and occassionally with marked resistance, by Mr. C to the tree of wisdom. The segment ends with Mr. Wi somewhat unwillingly going through to motions of tasting the fruit. Whether he swallows it or rejects it remains to be seen.

			TAS	M - L
361.	Mr. C:	I think you were screwing yourself up in labelling the position that you're defending wrongly.	X,F,EI↑	RP,DM
362.		In other words, you're saying 'I'm saying it's all genetics' but what you're talking about is a very nice interaction which is 100% accurate between genetics and environment.	X,SA,F	
363.		You may say in the beginning that Negroes may start off genetically endowed less then whites, that's reasonable, that's plausible..but still this endowment must interact with some kind of environment, which is what you were describing.	SA,F↑	RS,AC,DM
364.		There's no real disagreement on an intellectual level. What I was sort of raising this whole thing for is because I felt there was a lot of ah..you know..sort of 'let's kill each other' kind of thing.	X↓,F↑, EI↑,P↑	MA,RP,DM, AE
365.		and that's ok.	F,FA	DM
366.		I mean..you know..there's got to be a swift argument going on. Otherwise you're going to sit back and you're going to sleep..and I'd rather have you taking off at me with gun than to have you sleep.	FA↓,F, EI↑,P↑	RP,CD,AD, DD
367.		That's the worst thing you can do to a teacher..is sleep in his class.	P ,EI,FA	GI,DM,AE, DE
368.	Mr. Wi:	Whenever I was arguing this last point I was using it in no relationship to our argument, the other day I mean you know, it was just a point that occurred to me.	-FA,-P↓, -X↑,F	RP,DN,DD

Segment Summary
Mr. C: X↓,P↑,F↑,FA,SA
Mr. Wi: -FA, -P↓,-X↑, -F↓

Reparation, mutual face-saving and shared myth-building seem to be going on between Mr. C and Mr. Wi in this segment. Mr. C appears to be minimizing much of the confrontation between him and Mr. Wi over his functioning as a socializing agent, but he is not very convincing in justifying their mutual hostility as a means of injecting some excitement into the class. Given this definition of the situation Mr. Wi joins in by suggesting in act 368, that the last confrontation was really only over a relatively unimportant point. Neither is really able to convincingly ignore the fact that a heated set of confrontations has occurred.

			TAS	M - L
369.	Mr. C:	All right..yeah..Mr. Wr.	FA↑,F	AC,DM
370.	Mr. Wr:	You..can you give three..ah.. correct answers?	FA,-X↑	GI,DE,AE
371.	Mr. C:	Can I give three correct answers? I'll give you the ideal correct answers. Yeah.	X,EI,FA	DM,DD
372.	Mr. Wr:	But but..see that's the whole thing. There's..there's..I mean you can give one correct answer..I.. if you asked for one answer it would be real easy just to say, oh, well, first of all it's possible that the Negro is born inferior and..ah..as he goes on this increases because he's discriminated against because he's inferior.	-X,-FA, -EI↓	RS,CD,DD
373.	Mr. C:	That's right. That's it.	X,FA	DM
374.	Mr. Wr:	But that's one answer. But then..ah.. you can't give any more answers after that.	-X,-FA	RS,CD
375.	Mr. C:	Well sure you can. Sure you can.	X,FA↑,EI	RS,DM,DD
376.		Your general thesis is that..uhm.. uhm..there is a possibility that Negroes are less endowed at birth than whites. All right, but the environment comes in and manipulates this kind of potential that's given. That's a general thesis.	X↑,SA	DM
377.		Now, since it's difficult to establish whether whites and Negroes differ in.. on genetic endowment, uhm, the only reasonable evidence we have at this point is for the environmental uhm.. depression of this endowment whatever it is. Something along these lines,	X	DM

			TAS	M - L
378.		All right.	F,FA	
379.		Here are three central environmental presses that are exerted on the Negro that could account for the differences. And then you could argue about the pre-natal thing..anyone of the fifteen things I've listed on there is a reasonable..uhm..accounting of what we know about it.	X	GI,DM,DD
380.		We don't know anything about the genetics but we do know a lot about the environment.	X	DM
381.		So you put your money on the ones that you think are the most important.	X,SA↑,FA	
382.	Mr. Wr:	Aren't those..aren't those...are those three things...are those 100% environment, though?	-X,-FA	RS,CD
383.	Mr. C:	Uhm..those are on the environmental side of the coin..yeah.	X,FA	DM
384.	Mr. Wr:	I mean if you say...uhm.	-FA	RS,CD
385.	Mr. C:	Well you could..you mean..sure you could say..that all along there's a genetic-environmental interaction.	FA,X	DM
386.	Mr. Wr:	So you could..so you could only give one answer that's..without..you know..saying the same thing in different ways. That it interacts heredity and environment.	-X,-FA	RS,CD
387.	Mr. C:	This is the basic principle behind the answer.	X,FA↑,SA	DM,DD
388.	Mr. Wr:	All right..so then you want specifics so...you have to..your specifics..you either have to give specific answers that are 100% environment or 100% heredity.	-X,-SA,FA	RS,CD
389.	Mr. C:	No..why can't you say that..ah.. Negroes are constantly discriminated against and..ah..because of their genetically endowed..ah..intellectual.. a potential or less potential..you could argue that way but there's no basis for arguing against it.	SA,FA	RS,DM

			TAS	M - L
390.	Mr. C:	They cannot..they respond to this kind of discrimination differently let's say than a white would.	X,FA	
391.	Mr. Wr:	Wait.	-FA↓,-F↑	RS,CP
392.	Mr. C:	So all along the scale you see get this two..kind of meshing of genetics and the sort of interactional effects.	X	DM
393.	Mr. Wr:	I just don't see where you can get three answers.	X,-FA, -F↑	RS
394.	Mr. C:	Well, you can give any number, any number.	FA,F↓	DM,DD
395.	Mr. Wr:	I think you'd just say the same thing over again.	-X,-FA,-F↑	RS,CD

Segment Summary
Mr. C: X↑,SA↑,FA,EI
Mr. Wr: -X↑,-FA,-SA

			TAS	M - L
396.	Mr. C:	No, you're not. You're not. I mean..then you can say well it's all environment..you know, that's the end. Let's quit this course. Let's stop now,	FA↑,P	RS,DM
397.		we're saying behavior is a function of genetics and environment, and we can stop, let's go home. You know?	X↑,P	GI,DM,DE
398.		But no, our job is to see what are these environmental issues specifically. These are important.	SA↑,FA↑	GI,DM,DD
399.		Not only are these environmental issues, but what are some of the interactions that take place?	X,SA	DM
400.		Otherwise we can quit. O.K. You've gained the main emphasis here: behavior is a function of the person and the environment..goodbye everybody, got an 'A' and that's it. You know.	X,FA↑,SA, EI	GI,DM,DE
401.	Class:	Laugh.	-SA,EI	AE

			TAS	M - L
402.		Our job is..all right, what are these crucial issues?	SA,EI	GI,DM,DD
403.		What do we know about the person? What do we know about the environment?	X,SA	DM
404.		What kind of characteristics of the environment? How do these two insert	X,SA	
405.		You're a..you're fishing for premature closure.	FA,EI, SA↑	GI,DM,DE
406.	Class:	Laugh.	EI,SA	AE
407.	Mr. Wr:	I..I just..I don't know..I just don't like..I don't like the question. The more I think about it the worse it gets.	-FA,P	RS,CD
408.	Class:	Laugh.	-FA	AE
409.	Mr. C:	That..that..that's your right, that's your right.	FA,F	RS,AC,DM
410.		Uhm..it's possible. There are questions that people don't like. There are..oh..ways of teaching that people don't like.	FA,F,EI, P	GI,DM,AE, DE
411.		There are issues that people don't like, and there are teachers that people don't like. That's your right as a student. That's perfectly o.k.	FA,F↑, EI	GI,AC,DD
412.		But let's be clear. You may not like the question, but there are three reasonable answers to it. They are two separate issues.	FA↑,F,X↑	GI,AC,DM, AD,DD
413.	Mr. Wr:	I still can't see it. I'll take your word for it though.	-FA↓,X	RS,CD
414.	Mr. C:	No,no,no. Think about it. Don't take my word for it.	F↑, FA↓ SA	GI,DM,DD
415.	Mr. Wr:	I did. I..I don't understand what you said about..I didn't understand your.. 'cause you started mixing things up. You gave me one example..you know what I mean?	-X,-FA	RS,CD

			TAS	M - L
416.	Mr. C:	Mm..hmm.	X,FA,F↑	DM

Segment Summary
Mr. C: F↑, FA, F
Mr. Wr: -X, -FA

			TAS	M - L
417.	Mr. Wr:	Well first you said you could give your basic..uh..uh presmise, that there's an interaction.	-X↑,FA	RS,DN
418.	Mr. C:	Right.	X,FA	DM
419.	Mr. Wr:	Then you give three examples of how Negroes are discriminated against.	X,-FA	GI,AC,DW, DE
420.	Mr. C:	How..how the environment impinges on it's..that..that particular let's say genetic endowment. That's right.	FA↓,X	DM,AE
421.		Because we don't know anything about the genetics, we really don't. We cannot sit down and say give me a Negro child at birth..in utero..and I will measure his genetic potential for intelligence.	X,SA	GI,DM,DE
422.		This is what we would have to do. And Then I would take a group of whites and I would measure their genetic potential for intelligence in utero before the prenatal factors have a chance to start messing things up.	SA↑,X	DM,DD
423.	Mr. Wr:	No..I understand that..I just..that's the whole thing. I agree 100% with what you're saying..	FA,SA	AC,DD
424.		I just don't see where you can give three correct answers..and..I..I.. three...three	-FA,-X	RS,CD
425.	Mr. C:	Well, let's look at it this way. We're talking..let's take something very... we'll stick to for a while, O.K. We'll stick to academic performance.	X,FA	GI,DM,DD
426.	Mr. Wr:	All right.	FA	AC,DM

			TAS	M - L
427.	Mr. C:	We take two groups of people: a group of Negroes and a group of whites. We get a ten point discrepancy on some valid measure of academic performance.	X	AC,DM
428.		O.K. Give me one thing that might account for that discrepancy, just one..off the top of your head.	X,FA,SA	DM
429.	Mr. Wr:	That..the..the Negroes had worse training.	X,FA	RS,CD
430.	Mr. C:	The Negro suffered some kind of cultural deprivation.	X	EI,DM
431.		O.K. Stop. That's a perfectly valid explanation, plausible.	X,FA	DM
432.	Mr. Wr:	Isn't that 100% environment?	-X,FA	RS,DN
433.	Mr. C:	Sure, that's an environmental explanation.	X,FA	AC,DM
434.		All right give me another one, that could account for those results.	X,FA	DM
435.	Mr. Wr:	All right, the..the Negroes are stupider than the whites. They have less..a lower I.Q.	-X,-SA -FA	RS,CD
436.	Mr. C:	All right. They're..well they have a lower I.Q. We're really saying what goes into getting a lower I.Q.	X,FA	RS,AC,DM
437.		Could..couldn't I explain without ever relying on..well accept, we'll put and sort of lay the genetic issue to rest for the moment. All right.	FA	DM,AE,DE
438.	Mr. Wr:	Right.	FA	AC,DD
439.	Mr. C:	We accept that it's possible but we just can't say much about it. We can recognize it as a possibility but we have no evidence one way or the other.	X,SA	DM

		TAS	M - L
440. Mr. C:	So let's lay it to rest. Let's stick on the environment because this is where we seem to be in trouble.	FA,X	GI,DM
441.	Can we attribute the differences in two things to the fact that..uhm.. the Negroes because they were tested by a white tester get more anxious in that test and consequently performed poorer?	X,FA,SA↑	GI,DM,DE
442.	Is this reasonable? Is that a reasonable explanation? Is it different from the first one when we talked about culture deprivation?	FA↑	DM
443. Mr. Wr:	Yeah.	X,FA	AC,DN,DE
444. Mr. C:	O.K. Let us say that it's possible that..uhm..the Negroes because of poorer medical facilities end up with a higher incidence of brain damage which effects intellectual performance.	X	GI,DM

Segment Summary
Mr. C: X, FA, SA↑
Mr. Wr: -X,FA,-SA

		TAS	M - L
445. Mr. Wr:	That's cultural deprivation.	-X	RS,CD,DE
446. Mr. C:	Well, it's not..not at all, no,no.	X,FA↑	RS,DM
447.	Cultural deprivation refers to the fact that the experiences that these people are exposed to are different than the experiences that other people are exposed to. They are not.. let's say, you know..	X,EI↑	DM
448.	what is cultural deprivation?	X	DM
449.	It means you read books with the Bobbsey Twins--Do your parents use Spock?; does your mother read you these little books..you know on "Choo Choo the Wolf"..and uh.."Johnny the Train"..you know..these little stories when you're three years old?	X,EI	DM,DD

		TAS	M - L
450. Mr. C:	Does your mother encourage you to start writing very young? Do you have lots of crayons to play around with?	EI	
451.	Sort-of..do you have all these opportunities for learning? Does your old man take you to the Museum of Natural History when you're four.. so you take a look that's a Brontosorous dinosaur?	EI	
452.	Did you ever have a four-year old kid come to you and say that's a Brontosorous? It throws you for a loop. But that's what cultural deprivation means.	EI	
453. Mr. Wr:	I agree..I agree it's sort of like do you have the opportunities of being born in good medical facilities? It could be...	-FA,EI	RS,AC,DN

Segment Summary
Mr. C: X,EI↑,FA
Mr. Wr: -X,-FA

		TAS	M - L
454. Mr. C:	That refers to another aspect of the caste-system..cultural deprivation goes along with it, but that's not cultural deprivation. That's deprived medical or inadequate medical facilities and its logical consequences.	X,PA↑	GI,DM
455. Mr. C:	So are these three different yet plausible explanations on the environmental side?	X,FA↑	
456. Mr. Wr:	Right, but that won't take into account heredity.	-FA↓,-X	RS,CD,AD
457. Mr. C:	That..well, then you can always point out that it's possible that all along with these things there is the genetic kind of thing coming in as well, interacting with it.	FA,X	DM

		TAS	M - L
458. Mr. C:	In other words, that even if these kids you could say..even if these kids did get all these books read to them and everything, because of this basic initial genetic differences, they still wouldn't perform as well.	X	
459. Mr. Wr:	Isn't it..isn't it sort of what you're saying when you say that their heredity..heredically they have a lower I.Q?	-X,FA	RS,CD
460. Mr. C:	No,no,no. We're saying that genetically and in terms of environment both things operate.	X↑,FA↑	RS,DM
461.	I mean, your lowest kid is going to be the kid who's got the least to start with and the one who hasn't had any of the experiences. He's going to come up the poorest. But you can take a kid who has the same at least to start with and provide him with lots of good experiences and he's going to make up some of that deficit.	X	DM
462.	Or let's take the other one. You take a kid who's got 210 at birth..you know, he's raring to go.	X	
463.	And you stick him into a real deprived environment and you'll end up with a kid with a depressed I.Q.	X,SA↑	DM,DE
464.	And that shows you the way the two work and intertwine simultaneously, side by side.	X	DM
465.	And this is what we want to get across.	X,SA	GI,DM,DD
466.	Now we know more about the environmental end, this is all I can say; in Negroes and whites we know a heck of a lot more about the environmental end... and the genetic end in identical twins in terms of relative I.Q.	X,SA	DM

Segment Summary
Mr. C: X↑,FA↑,SA
Mr. Wr: -X,-FA↓

This rather lengthy series of interchanges between Mr. C and Mr. Wr provides us with a very rich portrait of the continuous vacillation between the kind of work and entrapping rebellion working rebels like Mr. Wr can engage teachers in. Unlike Mr. Wi, Mr. Wr is involved in more than just unprovoked annoying harassment of Mr. C. He seems to want to work on clarifying what he perceives to be his misunderstanding and disagreement with Mr. C, but a move in this direction leads at least momentarily, to a heightened sense of vulnerability in relation to Mr. C's power. This threatens his sense of individuality and his need to experience himself as unique and whole. Thus, he must reassert himself and in the process reject Mr. C or parts of him. For similar reasons, Mr. Wr resists and rebels against the control and power inherent in Mr. C's functioning as a formal authority.

Thus in the opening acts (368 to 371) of this segment we note Mr. Wr challengingly calling for three correct answers. Just as Mr. C begins to express his delight at the invitation, Mr. Wr cuts him off and reasserts his own position. He is apparently very ambivalent about hearing "the correct" answers from Mr. C, and especially about having his position challenged by Mr. C. By the end of act 396, Mr. C is quite annoyed at Mr. Wr's dogged refusal not only to budge, but also at his inability to understand the need for a more complicated approach to the problem. Part of what is also frustrating Mr. C is his growing sense of having been manipulated by Mr. Wr into functioning as an expert. In acts 396 to 406, Mr. C retaliates with an angry burst of guilt-inducing socializing. This leads to a rather short-lived attack on Mr. C as a formal authority in acts 407 to 416. Mr. C counters this with a series of primarily facilitative statements validating Mr. Wr's right to maintain his integrity as an individual. From here on through to act 444 we are witness to a rather typical continuous, and mutually challenging "intellectual" disagreement between a student and teacher. Each time Mr. C adopts an expert, formal authority, or socializing agent strategy, he is either immediately rejected by Mr. Wr or he enjoys a short-lived validation followed by considerable dissatisfaction or outright sabotage.

Some examples of this are in order. Having assumed that the genetic hypothesis has been temporarily laid to rest by granting its importance, Mr. C attempts to focus attention on the elaboration of a number of environmental hypotheses . In the process of clarifying what he means by cultural deprivation, we find him temporarily reverting to a somewhat amusing ego ideal strategy. This does not last very long and in act 456 Mr. Wr diverts the main thrust of Mr. C's efforts by again resurrecting the genetic ghost. This leads into a final, rather punitive and indecisive monologue on Mr. C's part in which he reasserts himself as an expert, formal authority and socializing agent. It is unclear where Mr. Wr has ended up at this point, since the hour has drawn to a close.

		TAS	M - L
467. Mr. C:	Well..ah..well (sigh) I guess that's about it.	FA↑	DM

		TAS	M - L
468. Mr. C:	I'm going to start..I wanted to go very quickly into learning the first part, classical conditioning, I'll go through very quickly on Monday. It shouldn't cause you too much trouble.	FA	GI,DM,DD
469.	Uhm..we'll go over the first part of that assignment sheet that I handed out, too, so that we'll probably get some generalization from that.	FA	DM
470.	We'll also try to go into a little bit of reinforcement theory or operant conditioning.	X,FA	
471.	The bulk of our time in learning will be spent on this..either the Mussen and Conger or the Hall and Lindsey.	X,FA	
472.	Now for those of you who are in trouble on the Mussen and Conger or the Hall and Lindsey there is another reference that may help. That's given in Hall and Lindsey and that is in Miller and Dollard, Personality and Psychotherapy or something like that.	F↑,X	
473.	There's about twenty pages, excellent discussion of learning theory. You know, cue, drive, incentive, and some of those four terms are discussed there.	X	
474.	So between your book here, the Mednick, between the Mussen, Conger, and Kagen, or the Hall and Lindsey, or if you want to go back to this original source..that is Miller and Dollard, which is referred to in many of these places, Chapter 4 or something like that..a very short chapter, about 15-20 pages covers the whole deal.	X	
475.	We'll try to go through this next week and then I want to move into psychosexual theory.	FA,X	

			TAS	M - L
476.	Mr. C:	We're moving much slower than I had anticipated but we're raising hot issues and we can't put them aside without dealing with them.	FA	GI,DM
477.		O.K.	FA	DM

Segment Summary
Mr. C: FA, X

Mr. C uses the approaching end of the hour as an opportunity to take over the class and to reestablish himself as an expert and formal authority. He seems to be announcing the arrival of an up and coming expert-oriented proactive work phase. It is unclear whether this reflects his sense of time having been wasted, requiring a major spurt in order to catch up, or whether he senses that the conflict and confrontation of the last three sessions has had a liberating effect. In pondering this question, it is helpful to briefly consider two additional sets of data; the changing distribution of teacher and student interpersonal feelings as suggested by shifts in factor and category scores over sessions 17 through 20, and shifts in the careers of some individual clusters of students which seem to occur around this period in the class' development. It is impossible to establish a causal relationship between the events of session 17 through 20, and these changes, but they are quite suggestive and interesting.

Session 20 and Beyond

The burst of formal authority functioning at the end of session 19 carried into the early phases of session 20. Thus we find Mr. C handling students' requests for extra exam points, having them fill out a grade sheet for the College, handing out reading lists and clarifying arrangements for the mass lecture the following day. The tone of the class is somewhat less abrasive and tense and Mr. C continues as an expert and formal authority with subtle facilitation and person functioning in the background.

The rest of the session is spent in describing two up and coming assignments. In the first students are to abstract a number of articles in a chosen area and the second concerns the option of doing a research project in lieu of the final exam. Two interesting themes characterize Mr. C's approach to these assignments. The first deals with his facilitative and reparative message to the effect that he views the students as responsible, capable, and probably as more competent than they see themselves. This is evident in his suggesting that they should decide if they want to work on the assignment in teams, in his frequent reassurances that they are quite capable of doing a decent research project, and in his holding them responsible for deciding whether the research paper or final exam will count toward their final grade.

The second theme reiterates a message he has sent on several previous occasions. In a number of ways he again indicates his refusal to be dealt with as a rigid, nasty and intrusive formal authority. He repeatedly reminds his students of the choices, options, and responsibilities they have. He encourages them to be their own kind of psychologist, but to also use the resources he has available and to consult with him whenever they feel like it. He urges them to consult with him at any time on their research proposals in order to insure that mutual and clear expectations are shared. Before closing the session with a presentation of examples of some exciting research done by previous students, Mr. C reassures the class about the final examination; that people doing research projects cannot be expected to do all the reading, that they will not have to review readings in detail, and that members of the class could write items which may be included as a bonus.

We indicated earlier our feeling that session 19 could be viewed as a critical confrontation period for this class, which may have had a profound impact on the development of the individual students as well as the class as a group. Are there any data which could support such a conclusion? Based on the shifts in teacher and student factor and individual category scores, on the Teacher-As scoring from session 17 to session 20, and on the subsequent careers of individual clusters of students, a cautious affirmative response is indicated. Let us briefly explore some of these data. For Mr. C, we note the beginning of a major proactive style, a short burst of warmth, and the end of his role dissatisfaction, formality and punitiveness beginning at about session 20. These shifts in factor scores reflect underlying changes over the four sessions in several member-leader scoring categories. We note a tendency for Mr. C's moving against, resistance, guilt-inducing and expressing depression to decrease while reparation, moving toward, acceptance, counterdominance and the teacher participation tends to increase. We also find, especially in session 20, a greater sense of comfort, legitimacy and less student resistance to his functioning as a formal authority, expert and facilitator.

Session 20 also ushers in some changes in the quality of student interaction. At about this point, for all participating students consent begins to replace contention, low concealment briefly supersedes concealment, and low discouragement as well as low challenge briefly emerge. Support peaks momentarily and anxious-dependence characterizes the next half dozen or so sessions. General student resistance to Mr. C's functioning as a formal authority,as a socializing agent and as a facilitator declines and we find that Mr. Wr, Mr. Wi and Mr. Mo, the major antagonists during sessions 17 to 19, are rather inactive in session 20.

These general shifts should be briefly supplemented by a more specific and selective reference to some of the more striking shifts in the performance of individual student clusters across the seven student factors. Let us briefly follow three different clusters of students.

Consider first the anxious-dependent cluster two students, which contains nine of Mr. C's class including Mr. Mo, who can't "fight City Hall", Mr. Mn, the only Negro in the class, and Miss Sg, whose name Mr. C mispronounced. Several fairly clear and consistent trends should be noted. These students began the course in an anxious dependent manner which is gradually replaced by enactment. Enactment peaks at session 17. Session 20 is followed by fluctuations between moderate anxious-dependence and enactment. These students end the course with a short burst of enactment. In Mr. Mo's case, part of the shift away from anxious-dependence may be understood by referring to the excitement, and sense of competence he experienced in carrying out an individual research project. In addition, high early contention changes to high-to-moderate consent, while discouragement which increases to a peak at about session 17, then begins to drop over time to very low discouragement. Challenge, support and exhibition tend to decrease in the early phases, and then show a somewhat erratic but generally upward trend. Support, for example, reaches an all-time low in session 17. Their initial high participation tends to fall off by the end of the term. In summary, these students begin anxious and dependent, contentious, discouraged supportive and low on on participation. Following sessions 17 to 20 and by the end of the term, they are moderate enactors, high on consent, moderately low on concealment, and dropping in support and participation. This suggests the development of a more comfortable, less tense and anxious pattern of private work and in relating to Mr. C, in the context of fewer interactions and some withdrawal.

Cluster five which includes only male working rebels like Mr. Wr, Mr. Br and Mr. Mi. These students also begin high on anxious dependence, manage to break out into a peak of enactment at around session 12. They dip into anxious dependence again around session 18, where a move towards enactment culminates in another high point at session 21. Following another brief emersion into anxious dependence; they climb and maintain a burst of enactment until the end of the course. Early consent gives way to contention which characterizes sessions 17 through to 21. Contention is then replaced by an increasing amount of consent, which reaches a maximum in session 27. From then on working rebels become increasingly more contentious. Early low concealment and discouragement increase, achieve peaks in sessions 18 to 20, and then begin a fluctuating but consistently downward trend. In general, we can observe early and decreasing challenge, support and exhibition, a trend which tends to be reversed around Session 17 to 18. Following these sessions, these students tend to become low on challenge support and exhibitionism. In addition, their participation, which is strikingly high during sessions 14 to 19, begins a rapid decline which is halted and reversed around session 27. These students therefore end the course high on enactment, contention and participation, but low in concealment, discouragement, challenge, support, and exhibition. They seem to be active, confident, open workers, whose frequent disagreements with Mr. C involve more resistance than open, rebellious hostility. One can envision them comfortably involved in a pattern of close give and take, characteristic of a teacher's functioning as an expert and socializing agent.

Finally let us briefly consider our non-working-rebellious cluster six students; that is, Mr. Wi and Mr. Mk. Up until session 17 these students show a transition from early anxious-dependence to enactment, as well as increasing contention, concealment, discouragement, challenge, and participation. Support and exhibition tend to drop off. The period covered by session 17 to 21 is characterized by sharp peaks and troughs; thus anxious-dependence, consent, concealment, exhibition all suddenly increase while discouragement, challenge, support and participation fall off considerably. In spite of further, sometimes marked vaccilations, these students tend to end up high on enactment, consent, and participation, low on discouragement, challenge and support, a pattern not very different from the cluster five working rebels.

Chapter Five Methodological Footnotes

1. The Teacher-As (TAS) typology is the basic conceptual framework from which two distinct, yet related, research and assessment techniques have been developed. The TAS scoring system, which is described in some detail below, is a procedure for scoring ongoing teacher-student interaction on an act-to-act basis, in terms of all of the six strategies. The TAS evaluation questionnaire, a paper and pencil instrument which can be completed by students, is presented in Chapter 9.

2. For the sake of convenience the six strategies can be abbreviated as follows; expert (X), formal authority (FA), socializing agent (SA), facilitator, (F), ego ideal (EI), and person (P). These abbreviations are especially useful in thinking and writing about the TAS scoring system and the TAS evaluation questionnaire.

3. The reader will require some familiarity with the Teacher-As scoring system, its rationale, assumptions, conventions and the meanings of the different categories or codes, in order to work his way through this scored transcript. Our purpose in presenting the actual act-to-act codes is to illustrate their usefulness in understanding the ongoing process rather than as a quick means for the reader learning to score. The transcript, plus the earlier discussion of the six strategies and the outline of the scoring system which follows form a package which could all be used in the training of scorers.

The Teacher-As Scoring System

We have maintained that every act on the part of a student or teacher whether it is proactive or reactive has implications for the teacher-student task relationships and for the kind and quality of work which is undertaken. Each act in turn may be relevant to a single teaching function and task strategy or as is more common, the intent of the act may require an array of scores in order to capture the complex shadings and subtlety of the message. These considerations have led us to devise an act-to-act scoring system which enables one to code the different pressures and counterpressures which characterize the continuous, yet changing, flow of interaction between teachers and students. We had two purposes in mind in constructing this scoring system; to make available an observational technique specifically designed to fit our conception of the task demands of the classroom, and to provide teachers with a practical diagnostic procedure for assessing, evaluating and understanding their own teaching styles.

The Teacher-As scoring system may be used in the specific act-to-act coding of transcripts or tape recordings of class sessions, or it may be employed in arriving at a more global assessment of actual on-the-spot interaction. It is possible for a well-trained and experienced observer to code directly ongoing interaction, but we have not as yet attempted this.

Consistent with our assumption that the Teacher-As typology has practical implications for teacher training, evaluation and development is our belief that a teacher who is somewhat familiar with the scoring system should be in a better position to arrive at a more global feeling for the intentions behind some of the complicated messages sent by students, to assess generally what was going on task-wise, to think hard about his goals and his attempts to implement them, and finally to gain some understanding of how he is being viewed and responded to by his students. Implicit in all of this is the notion that the acquisition of this kind of feedback may be useful in pointing to directions for constructive change and development. Finally, a certain degree of familiarity with the scoring system should be helpful to those who wish to acquire at least an intuitive understanding of the rationale and purpose of the Teacher-As evaluation questionnaire described in Chapter 9.

Scoring Decisions. Operating as a scorer involves a continuous confrontation with a series of interrelated decisions. First, one must identify the act to be coded. An act must include a reference to the unit or sequence of interaction to be scored, and to the participants, i.e., the message sender and the target. Next, the scorer must decide which teaching strategy or strategies are embedded in the act. Finally, the impact of the message within each strategy must be pinpointed. Let us briefly deal with each of these decisions.

Definition of an Act

Generally speaking an act is identified here similarily to the way it is defined in the Member-to-Leader scoring system in Chapter One. An act is defined as any interaction (a grunt, silence, a single sentence, a burst of sentences, or a single speech) where the participants, strategy, and intention or impact of the message remain uniform. A change in acts is indicated by any major change in scoring, i.e., the subsequent act is scored differently from the previous act. Thus, the end of one act and the beginning of another is signalled by a change in the message sender, the receiver, the array or combination of categories or strategies involved or the qualitative nature of the message across the categories. Since most acts are multiple scored for all six strategies a major change in any one of the categories gives the act a slightly different shading and leads to a new act.

One inevitably encounters certain interactions where unitizing is exceedingly difficult and where arbitrary decisions become necessary. We have standardized these in the form of a series of conventions. Thus, natural pauses, or even an arbitrary break in a speech may be made as long as there is a significant change in scoring. For a long, drawn out, unilateral speech, such as a lecture, it is suggested that the main opening thematic sentence be treated as one act. If a series of separate but related facts, data or experiences follow this main sentence, each set of those such facts or experiences can be treated as a single act. In general, when in doubt one may arbitrarily score short sentences or bits of information as a single unit. Our intention in the case of the latter two conventions is to capture a teacher's heavy reliance on a particular strategy without weighing it excessively or inadequately. Thus, we do intend for a teacher who lectures for a whole session to end up with a greater expert score than someone whose interaction covers a broader range of strategies.

Identification of Participants

The problem of the level of inference one makes in identifying the initiator and target of messages is not as pronounced here as it is in the Member-to-Leader scoring system. Our concern is with the more direct rather than symbolic connections between the participants, although an attempt should be made to use the particular situational context in making inferences and in arriving at decisions. Basically, we are primarily interested in acts where there is a fairly clear and direct statement from a student to the teacher or from the teacher to one or more students. In addition acts may be scored where the object remains unspecified, but where the context enables one to make a pretty good guess about the identity of the target. An example might involve a student's complaint that he would like to know more about what it is like to function as a psychologist, or a statement that multiple choice exams are unfair. Here the call is for more socializing agent and a better formal authority on the part of the teacher. Basically, we are suggesting that an adequate job of scoring can be carried out by focusing on levels one and two of the Member-Leader scoring system. In the case of teacher to student acts it is also unnecessary to be able to identify the specific student targets. Thus, a teacher would receive a score as a facilitator if he asked why a particular student was feeling anxious or if he asked why the females in the whole class were anxious.

Scoring Student-to-Teacher Acts

The scoring of a student's act once the unit has been identified involves a two-stage process. We have assumed that every student act, whether it is in response to the teacher's initiative, to a peer, or whether it originated with the student, contains some explicit or implicit reference to one or more of the six teaching strategies. The first step, therefore involves a judgment as to which of the strategies are the most salient and which are essentially irrelevant for this act. Having decided on the relevant strategies, the scorer's task it to then determine the particular qualitiative intention or thrust behind each strategy and code it. To illustrate the codes we shall use the teacher as expert abbreviated as X. The reader should keep in mind that the remaining five strategies are similarly coded by simply substituting the abbreviations FA,SA,F,EI, and P for X.

TAS Codes: Student-to-Teacher Acts

x: The strategy is not relevant or salient at the moment; the student communicates little or no concern about the strategy and seems to have little or no energy invested in the strategy at that moment in time.

X: The student validates the strategy: he seems to view it as quite legitimate and acceptable, he manifests neither great discomfort nor satisfaction with it and there is no pressure for change implied.

+X: The student expresses considerable satisfaction with the strategy and how the teacher has been handling it.

-X: The student expresses generalized disappointment or dissatisfaction with the strategy or the way in which the teacher is functioning within the strategy; implied is the message that the teacher should somehow be doing a better job, but there is no clear indication of whether he should be doing more or less of the strategy or whether he should cease altogether and try another strategy and there is no clear direction for change specified.

-X↓: The student reports,manifests or seems to be experiencing considerable discomfort, tension or frustration because the teacher is providing too much of a particular strategy; there is a fairly clear change message being sent and the teacher is being pressured to manifest less of, play down, or disengage himself from that particular strategy; frequently he is being asked to simultaneously manifest more of another strategy.

-X↑: The student reports, manifests or seems to be experiencing considerable discomfort, tension or frustration because the teacher is not providing enough of a particular strategy; the teacher is under pressure to manifest more of, to invest more energy in, or to be more engaged in that particular strategy; frequently he is also being pressured to provide less of another strategy.

Since these are six strategies each of which can be coded in any one of six ways, there are 36 scoring possibilities for each student act. These are summarized in the following 6 X 6 matrix.

			Strategies			
Student-to-Teacher Codes	X	FA	SA	F	EI	P
Not salient	x	fa	sa	f	ei	p
Validation, legitimacy	X	FA	SA	F	EI	P
Generalized satisfaction	+X	+FA	+SA	+F	+EI	+F
Generalized dissatisfaction, no clear direction for change	-X	-FA	-SA	-F	-EI	-F
Dissatisfaction because too much of strategy, pressure to be less	-X↓	-FA↓	-SA↓	-F↓	-EI↓	-P↓
Dissatisfaction because too little of strategy, pressure to be more	-X↑	-FA↑	-SA↑	-F↑	-EI↑	-P↑

A sample scoring for a student to teacher act might be as follows: -X↓, fa, -SA↓, EI, -F↑, -P↑, indicating the student's desire for less X and SA, more F and P, and his satisfaction with EI. FA is not relevant for this act.

A simplified flow chart to illustrate the scoring decisions to be made in coding student acts follows.

1.

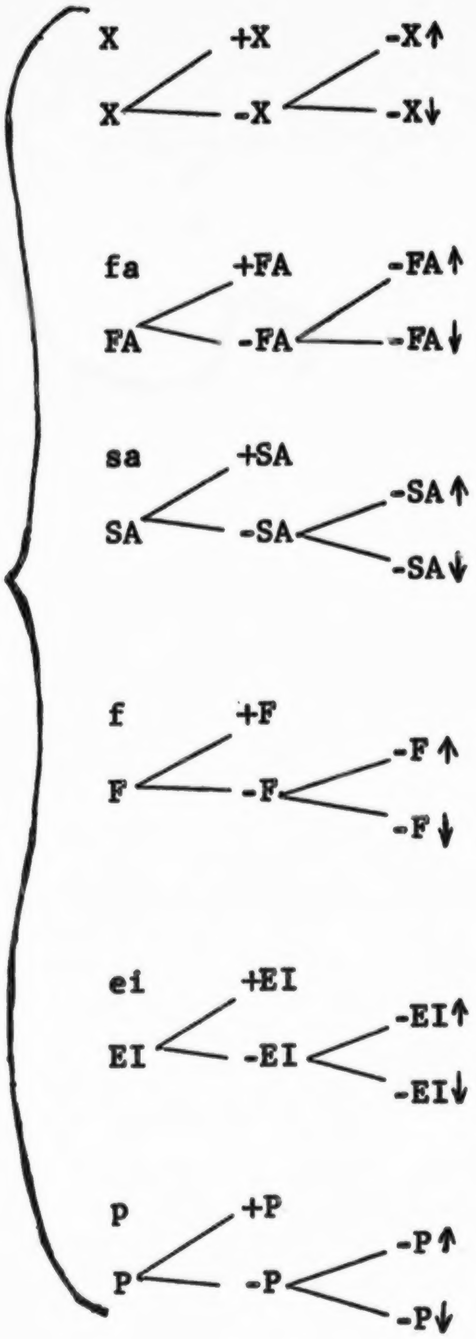
Identify coherent, uniform message from a student to teacher.

2.

Establish the unit to be coded and identify participants if possible

3.

Determine the nature of the message for each strategy



Scoring Teacher-To-Student Acts

Scoring a teacher's act similarly requires decisions concerning the strategies being invoked or rejected and the intent behind the act. The corresponding categories for teacher acts, again using X as a case in point are as follows:

x: The strategy is not relevant or salient to the teacher, and he has little or no energy invested in that strategy at that moment in time.

X: The teacher is manifesting or being that strategy, he has a moderate amount of energy invested in it and there is little or no evidence of the teacher's really asserting this particular strategy, it seems to form a continuous flow and is consistent with the previous and subsequent acts.

X↓: The teacher actively ignores, rejects, deemphasizes, or plays down this particular strategy, possibly in response to student pressure; in the process the teacher may be shifting to another strategy on his own or he may be rejecting a student's bid that he may be more of or emphasize more the original strategy; there is a discontinuous quality to the teacher's transition.

X↑: The teacher actively initiates or asserts this strategy, he spontaneously introduces it or does so as part of a simultaneous effort to reject a student's bid for more of another strategy.

The six strategies and four categories generate the following 6 X 4 matrix:

Teacher-to-Student Codes	Strategies					
	X	FA	SA	F	EI	P
Not salient	x	fa	sa	f	ei	P
Manifesting the strategy	X	FA	SA	F	EI	P
Rejecting the strategy	X↓	FA↓	SA↓	F↓	EI↓	P↓
Asserting the strategy	X↑	FA↑	SA↑	F↑	EI↑	P↑

A simple scoring for a teacher to student act might look like this:

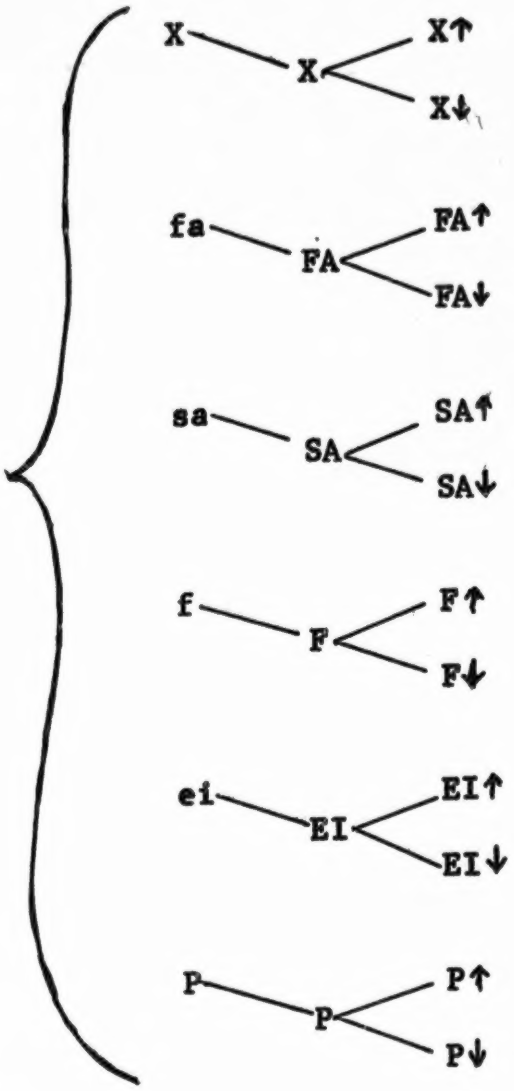
X↓, fa, sa, ei, F↑, P, indicating the teacher's efforts to play down his expertise and to use a more personal reference (F) to facilitate the group (P↑).

The analagous flow chart summarizing the decisions to be made in scoring a teacher's acts can be similarly diagrammed.

1. Identify a coherent uniform message from the teacher to a student.

2. Establish the unit to be coded and identify the target if possible.

3. Determine the nature of the message for each strategy.



Some Useful Scoring Conventions

Experience with this scoring system suggests that certain arbitrary decisions are required frequently enough to justify the establishment of a set of conventions. A few which we have evolved are listed below and additional ones may become necessary if the system is applied to a markedly different set of data.

a) When a teacher signals the beginning or end of a class, calls on a student to respond, or recognizes a student's desire to speak, code FA plus any other categories which may be appropriate.

b) If a teacher makes a marked and assertive transition or shifts away from a student's request for a particular strategy score an assertion (↑) for the first and a rejection (↓) for the second. Thus when a student asks about a reference while the teacher is enthusiastically relating a story about his research, and he ignores the student's message, score EI↑ and X↓.

c) At times teachers will use one strategy to build up or maintain another. We refer to this as one strategy being in the service of the other. For example a teacher may be excitingly relating a series of studies in an area that really excites him. We would argue that X is being used in the service of EI and the act would be coded EI↑,X. Or consider the situation where a teacher shares his feelings of discomfort when he is being evaluated by the chairman of his department, in order to facilitate his students' showing how they feel about his evaluating them. Here the teacher's personal feelings are being used as part of a facilitator strategy and the act should be scored F↑,P.

d) Multiple scoring in order to capture the rich nuances of an act is the rule, but a particular strategy-category combination may be used only once per act.

e) Silences are a problem and should be scored only when the context is highly suggestive of what's going on. For example, a silence following a teacher's question about an assigned reading and where it is fairly likely that some students know the answer, should be scored as -X↓.

Reliability of the Scoring System.

Experience suggests that certain people can be trained to be better scorers than others. Sensitivity to interpersonal relationships, especially the nuances and complexities of the teacher-student relationship, as well as some teaching experience are helpful assets. Relatively experienced people can be trained to achieve a respectable degree of reliability in about ten hours. Preliminary reliability data suggest that we are able to achieve agreement between independent experienced scorers close to the level of accuracy which we were able to achieve in the Member-to-Leader scoring system.

4. The inclusion of the Member-to-Leader scores adds a very rich dimension to the analysis in that we can begin to appreciate the kinds of interpersonal feelings which can be associated with particular ways of handling the task strategies, both for different students and the teacher. A brief explanation of the rationale and scoring categories is presented in Chapter One. For the sake of convenience, we have not included on the transcript the codes for levels of inference for each act. Since the vast majority of acts were scored as Level I or Level II, it was decided that the confusion generated by yet another set of codes was not worth the limited gain. In order to facilitate the reader's being able to utilize the Member-Leader codes in arriving at his own analysis of the transcript, we have included below a brief summary of the meanings of the different abbreviations.

The Member-To-Leader Scoring System Categories

Area	Sub-Area	Category	Abbreviation
Impulse	Hostility	1. Moving Against	MA
		2. Resisting	RS
		3. Withdrawing	WI
		4. Guilt Inducing	GI
	Affection	5. Making Reparation	RP
		6. Identifying	ID
		7. Accepting	AC
		8. Moving Toward	MT
Authority Relations		9. Showing Dependency	DN*
		10. Showing Independence	IN
		11. Showing Counterdependence	CD**
Ego State	Anxiety	12. Expressing Anxiety	AE
		13. Denying Anxiety	AD
		14. Expressing Self-Esteem	SE
	Depression	15. Expressing Depression	DE
		16. Denying Depression	DD

* For Leader-To-Member, score Showing Dominance, DM
** For Leader-to-Member, score Showing Counterdominance, CD

5. In order to present the transcript and our analysis simultaneously certain conventions will be adopted. The transcript has been unitized into scorable teacher-as acts and in order to facilitate discussion, these acts have been numbered. A series of acts which seem to coalese around some common theme or issue, or which involve a sequence of coherent interaction between a few parties will be lumped together to form a segment. Our analysis and continuous commentary will be presented after each such segment, or a group of related segments.

This analysis is based on the Teacher-As and Member-to-Leader scores for each act located in the right hand margin, the discussion of student and teacher factors, group development and individual clusters of students found in previous chapters, as well as on impressions gained from Mr. C and his students. Where acts are not scored the reader is to assume that the scoring from the previous act is still binding. At the end of each segment we shall present a summary, graphic picture, which is designed to convey in Teacher-As terms the major student and teacher pressures and counterpressures that have been operating during that sequence of acts.

On occasion this analysis may convey a greater sense of certainty and confidence than seems readily apparent from the data in the transcript. This is probably due to the fact that this section was written by Mr. C, who with others, reviewed and scored the transcript, and went over the session, other data as well as the student interviews with the group's observer in order to generate as rich and accurate a picture as possible. Where feasible, we have tried to share with the reader much of the recovery process as well as some of the data and reasoning behind particular conclusions or interpretations in the commentary sections.

V - 6: A Case Study of Teacher Strategies and Student Responses

The case study of group B is one attempt to examine the interaction of the students and the teacher in the classroom. Group B is typical of the four classes in that the pattern of group development fits rather well the overall description developed in the next chapter, but Group B is distinct in that the teacher (Mr. B) responded to the stress and conflict of the early sessions by making a structural change in the format of the class. Mr. B and his class struggled both covertly and openly with the problem of defining and maintaining Mr. B's role as teacher. The focus of this study is on that struggle and the ways in which it can be interpreted as an attempt to develop the kind of climate which would best facilitate work.

Before turning to the specific events it may be useful to review four of the issues which influence a teacher's definition of his role and then see how Mr. B dealt with or resolved those issues. The first is the discrepancy between the teacher's own personal needs, that is, his needs to be strong, to be mothered, to be hostile, etc., and his image of himself as an ideal teacher, that is, his view of his ability to foster creative thought, to maintain the respect of the group, to be a source of information, etc. In searching for a way to coordinate these needs and ideals, the teacher may use past models or peers as points of reference against which he measures his own strengths and weaknesses. In a very real sense, the definition of one's role as teacher requires a personal inventory. To the extent that one feels immature, how can one foster the class's maturity; to the extent that one feels hostile toward those who are dependent, how can one encourage openness and a sense of security among the students? The actual role which one assumes in the classroom must be some compromise, an abandonment of some ideals in the face of real needs and an attempt to control some impulses in the hopes of facilitating certain goals. As with any compromise, those elements which are modified continue to disrupt the teacher's efforts to maintain his role. The abandoned ideals still glimmer as remote possibilities and the stifled impulses occasionally surge through. The teacher needs strength to preserve a balance of these forces in the classrooms.

A second issue which influences the teacher's definition of his role is his concept of the students. The teacher has statistical data which describe the students, their previous grades, their socio-economic status, their achievement test scores, etc., but he also has some working hypotheses about the demands they will make on him and the ways in which they will live up to his expectations of them. A teaching fellow in particular is likely to have mixed feelings about his students. The teaching fellow is enough of a student to recognize in himself the kinds of dependency, lack of energy or interest, or sense of helplessness which he dreads finding in his students. Much of the scorn and frustration which he is likely to feel as a graduate student may filter into his conception of what his students are like. On the other hand, his commitment to academic interests may link him to his students as fellow pursuers of knowledge.

Bearing directly on the first two issues, the discrepancy between the real self and the ego ideal and ambivalence about the students, is a third and very powerful force: the teaching fellow peer culture. From the teaching fellows and their supervisors emerges a philosophy of education or at least a leaning toward some values about education. The particular compromise that any single teaching fellow makes about his role in the class is, to a large extent, determined by the values and philosophy of his peer group. This peer culture may not strictly define the ideal teacher's style, but when there is close interaction among the teaching fellows, every teacher's style is considered and evaluated by the others.

The sort of peer culture which is devoted to effective teaching will spend a great deal of time both in large groups and in informal bull sessions going over some of the basic problems in teaching. Some concept of the student is likely to evolve from these discussions. The group of teachers may provide any single member a more objective framework in which to think about teaching than he can provide for himself. With the aid of criticism founded in a supportive environment, one can move beyond one's own fantasies and projections to a more open, accepting concept of the students and, most likely, of oneself.

Finally, the teacher's role in the class is influenced by his definition of work for the students and for himself. In a sense, this concept of work in the class defines his role in that whatever he sees as the group tasks and goals will determine what he does to assist the class in accomplishing those tasks. To the extent that a given teacher has multiple goals for the group, one could assume that he will attempt to arrive at a role definition which is complex and flexible enough to allow him to move effectively toward his goals. The goals that a teacher has for his class are, then, evidence of an integration of the compromise he made about his needs and his ideals, the ambivalence he has about his students, and the pressure and support of his peer culture. One implication of this interrelatedness of forces is that as the teacher continues to make more and more satisfactory compromises in the direction of his ideals about teaching, he will continually shift his notion of work and therefore continually adjust his role in the class. The teacher's role is intimately linked with the degree of maturity he has in dealing with his own needs and fears. Every role he assumes is not just limited by his sense of self but should serve to expand his notion of himself through his interaction with his students and through the very experience of exerting self control.

The first session of group B demonstrates that Mr. B was still in great conflict about his role as the term began. Mr. B's first interaction with the class was to collect a class card from each student individually, repeating the student's name for pronunciation as he took the card and checking the name with his list. If the name was not on the list, he inquired about the student's "eligibility" for that section and said he would check with the main office. As more and more students came into the room, Mr. B made several remarks about how large the class was. After he collected the cards, he asked for the windows to be opened (it was January). Later, he told the class that he had a goal of two weeks to learn their names. This small episode about the class cards and the names is evidence of a persisting conflict for Mr. B. He had an ideal about teachings, much influenced by his own peer culture, which included being accepting, being considerate of the students' needs, and providing a secure environment for them. He also had a very compatible personal need to be liked. This concern about being liked, however, was linked to several disruptive fears about being drained by extreme closeness and being left powerless and robbed of control by the students, a suspicion that they would try to take advantage, to undermine his efforts or to expect too much of him. A whole complex of personal needs and fears seemed to oppose a teaching style which is based on openness and respect of the student, and a belief in the students' ability to learn, independently of the teacher. The need to protect himself against the strangeness of the class and to reassure himself that they would like him was expressed in the name learning and in the gesture of taking the card from each student personally. These acts of acceptance fit into the open, flexible, student-centered model of teaching. The use of the list as the final authority and the anxiety about the number of students were evidence of Mr. B's fears and his tendency to protect himself from the blame or hostility of the students while still maintaiming control. The combination of Mr. B's doubts about his strength, his suspicion of the students' motives, and his personal and philosophical needs to be accepting and honest stood in the way of finding a satisfying role for at least half of the term.

Mr. B's ambivalence about the students was demonstrated in several ways during the first session. In describing his goals for the course, he mentioned first that he wanted everyone to learn to spell "psychology". Later, he said that he wanted everyone to feel comfortable, that there was no party line and that people should feel "maximally free to participate". On the one hand, he was belittling and scornful of the students, on the other hand he was accepting of both their interests and their privacy. The combination of his scornfulness and his fear of the students made his attempts to engage their participation somewhat bumbling. In the middle of the first session, Mr. B asked the students if they had any particular interests that they hoped to discuss during the course. As a student mentioned some topic, Mr. B responded by fitting that interest into the outline he had already prepared for the course. A few students who mentioned problems which didn't fit into the course plan were told they would probably not deal with those issues fully. A little later, Mr. B asked the class how they felt about take home exams: "Let me get your opinions..I won't be bound by it..your feelings on the take home essays." These two incidents demonstrate how difficult it was for Mr. B to follow a philosophy of teaching which emphasized responding to the students' needs when he had doubts about his own control of the class and doubts about the students' capabilities and motives.

Finally, Mr. B's personal definition of work for the class was quite ambiguous in that it derived from conflicting needs and ideals. From the early sessions, it is clear that, at first, Mr. B considered participation as the work of the class. On three different occasions, when telling his goals for the course, when describing the kind of class it would be, and when describing the grading system, Mr. B mentioned the importance of participation. Yet, he insisted that no one had to participate. As he went over the reading list with the class, he stressed understanding of the basic concepts. He gave several warnings about the ambiguity of the material, advising the class that there were no clear cut answers and inviting the students to help him "tie things together." However, he also mentioned that on one test he had given to his last class he had asked for a definition of normal personality that he had given in class. When he talked about the quizzes and tests, he said, "The quizzes are not to see if you are keeping up to date. I can see that in class. They are more for me than for you."
If we take a close look at that combination of statements, it becomes obvious that we have no real idea of what work might mean for Mr. B. The class period was essentially a time when the group could discuss the readings. The style of that discussion was often of the question and answer type. Mr. B asked a question and the students gave all the answers that were appropriate. Often, Mr. B had a few specific answers in mind and he would continue accepting answers until those he had thought of were given. Other times, Mr. B lectured

on some of the material in the readings, clarifying or explicating with different examples. There were two quizzes, two papers, two hour exams, and a final during the semester, so the class time was not spent in determining whether the students really understood the material. Nor was it spent on exploring further implications of the material. In the early sessions, the class periods were devoted to the students who participated in order to express their individuality and to Mr. B who spoke in order to impress the students and to reassure himself of his legitimacy.

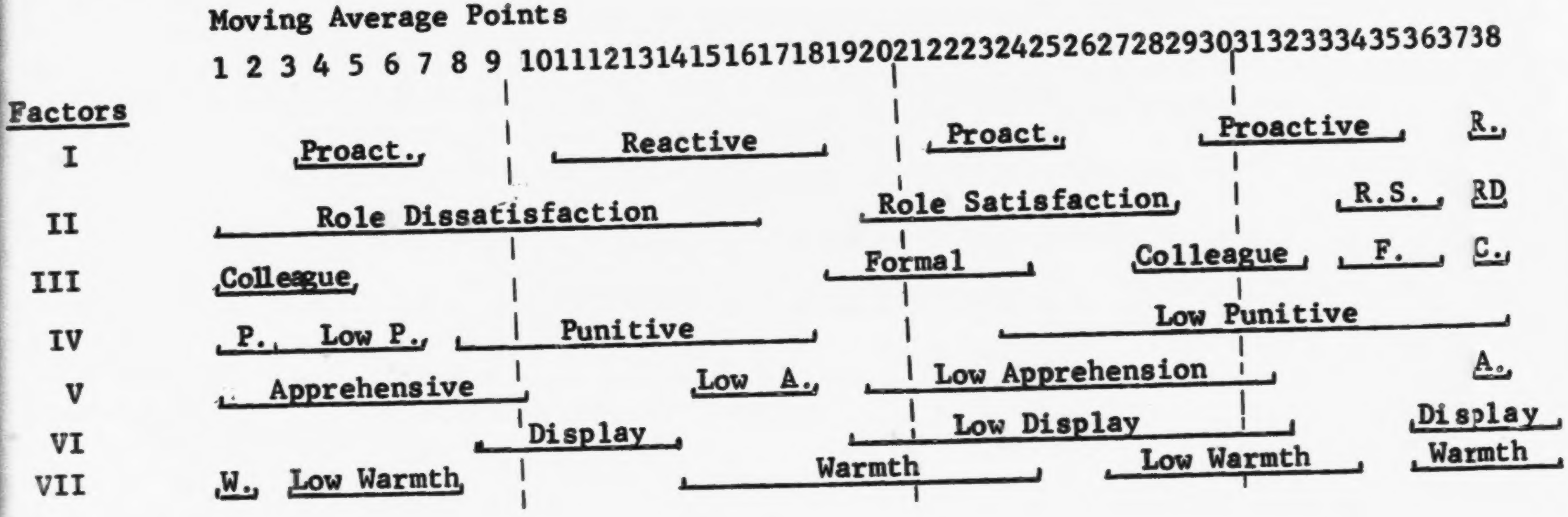
The students were very suspicious, blaming and resistant in the early sessions. They were busy protecting themselves from being taken in by a man who said he was really interested in them and yet made derisive remarks about their ability. Mr. B was anxious, suspicious that the students were not going to the lectures or doing the readings, and challenged by the contentiousness he met in the class. Every doubt he had about the students' abilities to deal with the material was associated with some doubt he had about his own capacity or potency, every effort he made to encourage student participation was accompanied by some tactic that inhibited or decreased the quality of the students' performance. The guessing game approach, the guilt-inducing about not participating, the choice of beginning with a very low key case study (Hartley Hale) followed by all the jargon of learning theory, each of these approaches had built in it the maintenance of suspicion and the possibility of reconfirming Mr. B's doubts about his students. The issue of mistrust was so strong in the early part of the course that nothing resembling serious thought or close interaction between Mr. B and the students could have taken place.

Despite the grim impressions of the early sessions, the story of Mr. B's class is not a tragedy. The students evaluated Mr. B and the course very highly. Mr. B remembers this class as one of his most exciting teaching experiences. If those are the facts, then it is the task of this study to describe the development of the group, to look at its time of crisis and of productivity, and to understand how this potential catastrophe became a positive learning experience. The most fundamental issues are the way in which the teacher vacillated in his role, seeking role satisfaction, and the ways the student vacillated between work and distress. We will use the factor trends to describe first the teacher's movement, then the students', using the actual sessions as specific examples or as evidence of the buildup or shift of a pattern. We will look at some specific students in order to examine different styles of interacting within this environment.

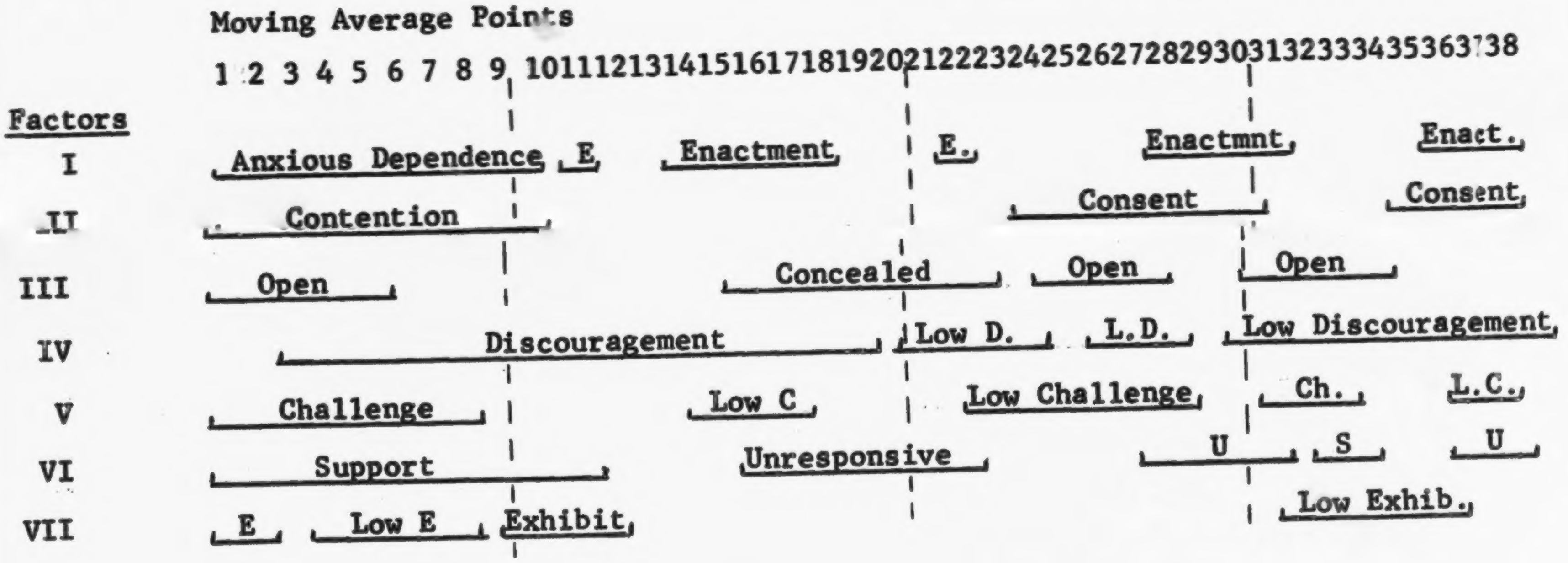
The data for the factor trends was collected from tapes of each session and scored according to the 16 category system described in Chapter One. After each session was scored, a summary description of that session was written. The scores by category by session for the teacher and the students were reduced to the seven teacher factors and seven student factors described earlier. The factor trends were derived from a moving average of the session factor scores, combining four sessions to make a single data point. Thus the session by session vacillation is reduced and the strong trends are emphasized. Since vacillation is so central to Mr. B's class, it is important to point out individual sessions within a trend which do not fit that pattern as well as sessions before a factor trend which may signal the coming of that trend. Figure A is a summary of the teacher and student moving average factor scores for Group B. This graph will allow us to keep the total student and teacher interaction in mind as we focus on some particular sessions.

Figure A

Teacher Factors for Group B



Student Factors for Group B



Before describing any particular events or sessions, it is important to point out that Mr. B was entirely free to run the class any way he pleased. He had full responsibility for the course readings, the questions on the exams, the paper assignments, and the nature of the class sessions. Once a week, all sections of the course met for a lecture or panel discussion which was planned in part by the teaching fellows. The other three class sessions each week were under the sole direction of the individual instructors. Since much of the following discussion involves inferences from the structure of the class and the nature of the discussions to needs and conflicts of both Mr. D and the students, it must be recognized that these structural decisions were made by Mr. B himself and not planned by some supervisory or departmental authority.

The issue which makes this class a particularly fascinating one to study is the unusual relationship between the formal structure of the class, the underlying emotional concerns of the teacher and the students, and the teacher's goals. In an attempt to reduce the tension of the early sessions, Mr. B suggested a structural change at session 11 whereby each member of the class would be responsible for the discussion of a particular topic and Mr. B would become more of a resource person than the central authority. The group moved their chairs from rows into a circle and Mr. B began to call students by their first names. Mr. B hoped that the change would allow more access to using the group and its interactions as a source of material for discussion. He also hoped to increase participation, and to reduce the contention he faced from the students by stepping out of the position of direct control. The important point about this change is that it did not lead to increased satisfaction for Mr. B nor did it reduce expressions of discouragement from the students although it did limit the expressions of contention and challenge for a while. The revision of the formal structure which might have led to open discussion of the early hostility and mistrust did not in fact produce that result because Mr. B's goals for the class remained in conflict. In other words, it is obvious from this case study that the conflicts and goals of the particular teacher are directly related to the distress and work periods of the students regardless of the formal structure of the classroom. Looking at lecture versus discussion type classrooms as a variable which affects learning appears to be tangential to the personality or needs of the teacher himself as they are expressed in any structural format.

Now let us look at the factor patterns from Figure A. In the early sessions (data points 1-9), Mr. B was doing most of the talking. He tried to be casual and to encourage student participation as is indicated by the early Colleague factor, but the Punitiveness, the Apprehension, and the general Role Dissatisfaction are evidence that this early independence was unstable and probably not fully felt. Rather it served as a model for the kind of relationship Mr. B hoped would develop. The early sessions find Mr. B doing a lot of question asking followed by long answers to his own questions. This dominance was accompanied by suspicion of the students, hostility toward them and a long period of uncomfortable depression. It is interesting to note that one persistent way Mr. B reacted to his own role discomfort was by punishing the students. He confronted them time and again with having failed to take over the responsibilities he gave them. Nonetheless, his doubts about the students' motives and abilities did not alleviate his discomfort but became entangled with it.

In order to understand the students' participation in the early sessions, and throughout the semester, it is important to keep in mind that the high factor scores on each factor do not necessarily reflect the total group acting in unison. Rather they are the result of different subgroups who responded in different ways to Mr. B and to the class situation. For instance, it is not the case that all the people who spoke in the early sessions were both challenging and supporting. Some were challenging and some were supporting. If we look at the early acts, however, it is clear that almost everyone who did participate was expressing anxiety and dependence. Then too, we have no way of monitoring the feelings of the silent students during those early sessions.

It seems as if there was an initial period of denial and insincere closeness by the students in the first and second sessions which paralelled Mr. B's early Warmth and Colleague style. The brief period of Low Discouragement and Exhibition are evidence of this "so glad to know you" game. The long periods of Anxious Dependence, Contention, and Challenge, however, involved the most serious and disruptive responses for Mr. B to handle in the early sessions. The students' support was so closely linked to dependence that Mr. B was unable to accept it as a trustworthy sign of alliance. For the boys, the issue of trust was closely linked to a kind of testing to see if Mr. B really was the powerful male in the group. For the girls, the issue of trust became linked to the problem of intimacy. How close could they get to him as a person before he fell into the formality of the teacher role?

The tension of the early sessions can be seen clearly in session 9. Mr. B's Role Dissatisfaction, Punitiveness, Apprehension and Display were responded to and elicited by the students' Anxious Dependence, Contention, Discouragement on the one hand, and support and exhibitionism on the other. The session began with a critical discussion by the students of the panel discussion they had heard. Evelyn had a criticism, but when Mr. B wanted to call on her, he could not remember her name. Mr. B encouraged the class to bring up any questions they had about the reading or the panel discussion, but he responded to most of the questions with "Wait and we'll get to it." He invited the class to bring back any unanswered questions at some later time. The discussion was on avoidance conditioning, and Lou asked if punishment was the same as avoidance conditioning. Mr. B seemed unable to answer, but Libby offered an answer for him. Mr. B was very grateful. Different instances of avoidance conditioning were discussed and the class, led by Evelyn, began to criticize an experiment in which Alfred, a little boy, was conditioned to fear white, furry things. The students argued that it was cruel to leave Alfred afraid of something of which he had no fear before the experiment began. Curt criticized the whole process of conditioning as shallow to which Mr. B responded by insisting that we are always being conditioned. No matter what example Mr. B gave to illustrate concepts of drive, frustration and conditioning, there was always at least one student who found an objection to it.

The class' criticisms of the panel discussion were indirect criticisms of Mr. B, testing his competence and his control. In this session, the group seemed to use the injustice done to one of its members, Evelyn, as a spring board for their attack. Particularly at a time when the class was discussing unconscious motivation, and finding that notion so difficult to accept, Mr. B's inability to remember Evelyn's name was interpreted as an act of hostility. Thus, this insult, coupled with the rejection with which Mr. B met the questions he had asked for (Wait and we'll get to it) increased the group's sense of anger and frustration. When Libby responded to Lou in Mr. B's stead, she gave the group the strength it needed to begin to blame Mr. B for his injustice and for unfairly exercising his role as teacher. The blame which Evelyn wished to put on Mr. B for having forgotten her name was carried by others into a general resistance. The case of Alfred was symbolically the case of all of them, innocently confronted by disquieting concepts like unconscious motivation, and left in the hands of a controlling authority who did not fulfill his responsibility as leader, counselor, or mother. Mr. B, unable to quiet their resistance, clung to a fatalistic dominance clothed in the terms of behavioral conditioning. His support of the behavioral point of view was a sign of his helplessness in the face of challenge.

The suggestion for a change of structure came from Mr. B at session 11. This change was not planned from the beginning of the term. Rather, it was a response to the first three weeks of class. The plan was designed to increase the informality of the class, to bring students into contact with each other and to increase each student's feeling of responsibility for the work that was to be done. Mr. B proposed the plan with a great deal of apprehension and reminded the students that he would not be satisfied if the discussion turned into a general bull session. It was as if he was caught between his needs for control and his needs to be liked, between his intellectual value on learning concepts relevant to psychology and his personal discomfort with the distance, hostility and challenge of those early weeks. The structural change was Mr. B's way of dealing with the conflict between his intellectual and emotional needs. On the surface the plan was in harmony with a developing peer culture norm about having the classroom be a meaningful interpersonal experience. On closer inspection, however, the structural change was not supported by a strong conviction on Mr. B's part. He was not comfortable dealing with hostility in the classroom and did not change in this respect after session 11. Further, he was ambivalent about the students' ability and the new system provided further chance for that ambivalence to grow. Giving the students responsibility for the discussions meant that he could not be certain that all the material he had planned for the course would be covered. In order to compensate for that uncertainty, Mr. B gave two quizzes, two hour exams, two papers and a final. In evaluating the quizzes and exams, Mr. B continued to compare the performance of this class to his other section which was a straight lecture-discussion format. Mr. B had not changed his work goals, he had not revised his opinion of the students, and he had not dealt with or resolved his personal needs when he proposed the change. Thus a format that seemingly would have promoted openness and encouraged independence did not in fact have those effects in Class B.

The factor scores for data points 11-20 are evidence of continued wariness in the class. In line with the proposed change in structure, Mr. B switched from a Proactive to a Reactive style but his Role Dissatisfaction continued. The discussion format became a forum in which Mr. B supported those students who participated and punished those who did not by reminding them of their responsibility for the success of the class when students led the class. Mr. B restrained himself from participating and came in mainly to give a summary or to settle a dispute. He thereby removed himself from the position of control which had elicited early hostility among the students. It is clear that during those sessions following the change, the students' Challenge and Contentiousness dropped out. Having agreed to the change, the students were about to make this new plan succeed by taking the role of discussant or by cooperating with the person who was the discussant. During this period, however, Mr. B gave a quiz, a paper and an hour exam. The message which gave the students difficulty was Mr. B's ambivalence about how independent he could or would allow the students to be. Those students who enjoyed independence were discouraged by Mr. B's continued efforts to control the class. Those students who wanted Mr. B to remain in control were discouraged by his seeming willingness to let students make some of the decisions and his restrained participation. Thus, while student Challenge and Contention dropped out, their discomfort is demonstrated by the continuing undercurrent of Discouragement, the decline of Support, and the lack of Consent, which accompanied their early period of Enactment. A central problem to be considered in this case study concerns the change from this early enactment which is clearly unstable and linked to student distress to later enactment, which is not accompanied by discouragement, but coincides with student consent.

One feels a large amount of compliance in these sessions between 11 and 20 both by students and by Mr. B. Students volunteered to be discussants and took the responsibility when it was their turn to lead the class. The other class members remained rather passive in their participation during these student-led sessions. Mr. B for his part complied with the scheme by remaining relatively quiet during the student presentations and providing only a short summary at the end of those sessions. Those students who had volunteered felt discouraged because of the lack of student participation. Other students were both angry and discouraged by the quiz in session 13. They felt that the format of the quiz and the format of the class were incompatible. On seeing the results of his quiz, Doug's response was "I hope we're not an experimental group..I'm more concerned with my grade point than with learning." There was a sense of being abandoned to which Mr. B responded by reassuring the class that he would not have tried such a change if he did not think the class was capable. He also insisted that it was up to the class to take the responsibility for making the class periods valuable.

The last two discussants in this period, Libby and Lois, bore the brunt of the students' uneasiness. They were supposed to present material about perception in sessions 17 and 18, but they were unable to engage the class in discussion about this topic. The interaction was mostly between the strong males in the class, struggling and challenging each other. The content of the articles was lost amid disagreements and quarrels over small points. Occasionally Libby looked to Mr. B for help and he spoke up in an effort to clarify or make peace between two class members. Finally, Mr. B took over the discussion by reviewing the content that had been covered and by commending Libby and Lois for their fine discussion. At that, Doug, one of the boys who had been quarreling, said, "I don't know where you got the idea that it was such a good discussion. I didn't get a thing out of it."

In the second of these two discussions on perception, Mr. B tried to open the discussion up to what had happened the time before in order to find out how the class felt about the changes in format as a whole. Lois began to say how discouraged she was about the discussion when Dave broke in to ask when they would see the trapezoid illusion. Later in that session when Libby confronted the group with issues of participation and responsibility, Dave interrupted again to ask a content question about Gestalt psychology. In the face of this failure to bring the issues of participation out, Libby and Lois became discouraged and turned to Mr. B for more and more assistance. The male students seemed to take over the class, either by more fighting or by telling personal anecdotes only tangentially related to perception and memory. At the end of the session, Libby asked Mr. B to summarize, but he seemed very withdrawn and said that all the material had been covered.

The importance of these sessions is that they showed Mr. B that structure alone would not bring about the sort of interaction that he hoped would be possible in this class. First, Mr. B was fond of Libby and Lois and he was discouraged at having allowed them to meet with disappointment and frustration. Second, he was faced with the recognition that he lacked the skill needed to make use of the kinds of interactions which take place when there is low structure. Finally, he was hearing competent people ask for his help and dominance which strengthened his earlier notions about the necessity for a teacher to be in control. These sessions of student distress without challenge or contention set up an atmosphere in which Mr. B felt freer to be dominant and controlling. He had created a situation in which his strength could be seen as a way of coming to the aid of students and responding to their demands rather than imposing control.

In session 20, Mr. B took the opportunity to find out how the class felt about his strength and his role in the class by asking the students what they thought about being called on to participate. This session provides a chance to hear all the students' opinions about the amount of control they wished Mr. B to have and the amount of autonomy they wanted to preserve for themselves. Some students wished Mr. B to keep the procedure the same, letting those who wished to speak do so and those who wished to remain silent be silent. Other students wished that there were more pressures on them to talk. Ned said he thought it would lead to even more needless discussion if there was pressure to participate. Curt pointed out that there was no opportunity to ask Mr. B points on the readings when there was a student discussant in charge of the session. Although this was not really the case, Mr. B accepted his complaint. What he did not accept was Doug's pressure for Mr. B to tell the class his opinion about the nature of the participation in the class. Finally, Peggy remarked on the quality of the interactions in the class: "We've got a long way to go, we're still plenty inhibited." It is clear that participation meant very different things to different members of the class. For some it was a sign that work was getting done, for others it was a way of "snowing" Mr. B, for others it was a way of getting close to Mr. B in a more personal sense, and for still others, it was a way of engaging Mr. B in challenge.

The sessions between 11 and 20 served to assure Mr. B that the students could deal with the material and also that they both needed and wanted him to take an active part in the class. Further, the next part of the course was planned to cover psychoanalytic theory and psychosexual development, an area in which Mr. B was both interested and invested. It was a combination of the students' expressed need for his dominance and hiw own concern that the material be adequately covered and understood the facilitated Mr. B's strong, comfortable role in sessions 21-29. These sessions were characterized by Role Satisfaction combined with a dominant, formal style of interaction with the students. The Punitiveness of the sessions immediately following the change in format dropped out. The most comfortable sessions for Mr. B were during this time in the class when he was Proactive and Formal. He met the students' anxiety over the material by taking a very expert stance toward the class, combining withdrawal of emotionality and concentration on the details of the theory. Mr. B lectured during part of six of these nine sessions. It should be noted here that Mr. B's comfort was not matched by simultaneous comfort for the students. Although student discouragement faded after session 20, there was still anger and mistrust which lingered into this 3rd quarter of the semester, particularly in session 21 when Mr. B discussed the hour exam, 22 when the males and females fought about the role of women and in 24 when Doug and Curt struggled over the problem of psychic determinism. In addition there was general anxiety over the material, particularly the sessions on dream interpretation and psychosexual development. During this period, the students learned from Mr. B how he wanted them to deal with these kinds of threatening issues. He taught them to resist expressing their anxiety in order to work on substantive issues. He let the class know that he could be very pleasant and effective if they did not demand his responses to their anxiety or dependence.

One of the concerns which continued to trouble Mr. B was whether this class was learning as much of the material as his other section despite the difference in structure between the two sections. Rather than adjusting the second hour exam (which was held the night before session 29) Mr. B held a cram session in the evening to review the material. After announcing the exam in session 22, he referred to it again in sessions 25, 27 and 28. During session 29 it was clear that Mr. B had strongly identified with this class over the issue of the test. When asked how this class compared to his other section, Mr. B referred to this class as we, the other class as they. There was a considerable amount of argument and criticism over the items on the test. Mr. B was too ambivalent about the structure of the class to really assure the students that they had done well. His evaluation of their performance was, "Either the test was easy, or you really knew it." That kind of comment could not satisfy those students who felt unsure about their ability to handle the material or who needed a definite response to assure them of their competence. So the concern and distress continued to be expressed until Mr. B asked the class why they were so anxious about the test.

This episode is similar to the contagion of anxiety that Sullivan describes in the mother-child relationship. Mr. B's uncertainty over the value of the class structure and about the students' competence elicited uncertainty among the students about those same issues. When they expressed these feelings, Mr. B was unable to reassure them because he was further discouraged by their increased dependence and distress. His response was to communicate his own ambivalence and to deny the students' anger by switching the subject of discussion to their opinions on take home exams where he got a lot of support and consent from students on his point of view. Mr. B's style remained consistent during the sessions, moving quickly from affect to task issues, permitting the expression of hostility among the students, but rarely using these moments of anger to look at the class process or the feelings of the students toward him. The resulting mood of the sessions in the 20's was somewhat impersonal, restricted considerably to role interactions. The discussants discussed, Mr. B lectured, and occasionally some hostility burst out and died down within the framework of the discussion. Feelings about other students, about Mr. B or about the class structure were never examined as the legitimate work of the class. The fundamental issue was one of competence, rather than legitimacy as it had been earlier. Mr. B was proving to the class that he was competent, and he was testing the students to find out if they were as competent as he had claimed they were in session 11.

The last twelve sessions, 30-41, include the second student work phase accompanied by fading role satisfaction for Mr. B and continued proactivity. This final period in the group development involved a shift away from role relationships to personal relationships. A combination of several events allowed students to perceive Mr. B much more as a person than he had been perceived previously. Session 30 had been scheduled as a time when a movie would be shown, somewhat in compensation for having had the hour exam at night. The movie never came due to some mixup in scheduling, so Mr. B (who came to class for the first time in Bermuda shorts) and those students who wished to stay just sat around and listened to Mr. B joke about grading the exam, the money he had collected from the class to pay for the movie, and the class in general. Mr. B was very informal and quite relaxed. The students who stayed seemed to be eager for this opportunity to move closer to Mr. B. When it was clear that the movie was not going to come and Mr. B suggested that they could stay and talk, Mary said, "Will you psychoanalyze us?" She was clearly eager for this chance to interact with Mr. B on a personal level if only to satisfy her own curiosity and fantasies.

The other "personalizing" events were an evening meeting at which Mr. B showed slides of his trip to Russia and several class meetings when Mr. B talked about professional opportunities in psychology and about the value and failings of psychotherapy. On all of these occasions, Mr. B was clearly the central figure; they were not times of mutual acquaintancing. These meetings allowed the students to know Mr. B outside the context of the classroom struggles and thereby allowed them to relinquish some of their stereotypes about their relationship to him. It seems appropriate to infer that the periods of student independence which occurred in this last quarter of the term were made possible by the emergence of Mr. B as an independent person in the students' eyes. Mr. B's willingness to respond to the students in a personal way seemed to encourage a sense of responsibility and concern for the class that was linked earlier to Mr. B's punitiveness and distress. In these later sessions, it is important to point out that student enactment sessions were not the result of one or two students' leadership, but of a great deal of student involvement in student-led discussions.

The paradox of these last sessions is that Mr. B was withdrawing energy and enthusiasm after a long struggle of ambivalence while the students seemed to have a resurgence of energy. In an interview after session 33 Mr. B expressed his position: "I'm tired of the doubt about it. I've felt very insecure many times during the year and I wish it were over." "I've had to prove something all term long. It would have been easier with one class; then I wouldn't have to compare them." "It's not really discouragement, it's more like brain fatigue; I've had it." This sense of low energy accompanied a new position for Mr. B. He left the final series of presentations much more up to the students to plan. He wrote two final exams; one for the 8:00 a.m. class and one for this section, relinquishing his former insistence on comparing the two groups and his former investment in mastery of the content. Of course, this independent style had its own dangers. Some students who began to feel increasingly strong and comfortable made moves toward closeness or frankness that Mr. B was not willing to accept. In session 38, after a short quiz, the students were talking among each other about a future school event. Everyone was talking at once until Lou asked Mr. B teasingly: "Do you feel left out?" Mr. B responded: "I didn't feel left out when you were taking the quiz." Mr. B was still very sensitive to any moves that looked like disregard or threats to his authority, even in this final period when students were both performing well and consenting to his control.

The final session was an interesting demonstration of the interpersonal sensitivity that had developed in the class, without ever legitimizing it as a group goal. The topic for discussion was learning and the need for structure. Although Elaine was supposed to be the discussant, Mr. B took that opportunity to present an apology and justification for the course. It was clear that he felt quite distressed at this final meeting, trying to describe his ambivalence to the class and trying to apologize for some of the failures in covering the material. The students responded to Mr. D's distress with a series of unique and meaningful positive reactions. Even Doug chimed in, "Who cares about facts, it was the exchange of ideas that counted." The class struggled to reassure Mr. B with all the techniques of denial and support that they had learned from him over the semester. However, Mr. B, who was still struggling with his discomfort and mistrust of the situation could only respond with a chorus of doubts, particularly on this final day. It was only after Curt, an older student who continually expressed a sort of condescending disbelief and criticism of the material and of Mr. B, confirmed the value of the course in relation to an earlier psychology course that Mr. B resumed his usual outlook and agreed that the experience had been a good one for him and for the group.

The term ended for Mr. B with a lot of support from the students and some sessions of comfortable student-teacher interactions on topics in which both Mr. B and many of the students were interested, issues of psychotherapy, psychological testing, free will versus determinism, and the implications for child-rearing and education in Walden Two. Mr. B, having tired of the continuing struggle to watch himself and his control of the class, moved comfortably into a dominant position which he relinquished to the discussants when they were in charge and which he resumed with the students' consent when he wanted to. The short regression to the uncomfortable, mistrustful tone of the early sessions was probably due to Mr. B's concern about the students' reactions to the course as they would appear on the student evaluation forms that were given out during session 40 and to the final session of repentence for having put himself and the students in a situation which he saw as intolerably ambiguous.

One must infer from the data that Mr. B's notion of work solidified with his ability to establish a comfortable role in the class and with the students' increased commitment to the subject matter. The sessions which most represented the goals Mr. B valued were during this last quarter of the term in which students interacted with a high degree of effective involvement on content issues which Mr. B had chosen as appropriate to the course. They were sessions like session 39 when the students took a major role in introducing points of view or criticisms, where the students supported rather than abandoned each other and where Mr. B was free to interact without becoming the sole focus of attention or without drastically shifting the discussion on to his comment. When the students helped each other, Mr. B was not needed as a source of energy or protection. During this session it was not necessary for Mr. B to take control in response to feelings of discomfort about the quality or level of understanding involved in the discussion. Neither the process of subversion nor betrayal interfered to arouse suspicion or anger. The content was felt to be legitimate, the students were able to rely on and control each other and Mr. B was not threatened by direct anger or dependence.

To this point we have looked at the class development considering the students as a unified block, interacting as a general body with Mr. B. It is now necessary to understand the behavior of some individual students in order to better appreciate the total interaction in the classroom. One must assume that the reactions and decisions Mr. B made with regard to the class were to some extent a response to the demands of particular individuals in the group. As was mentioned earlier any teacher begins the class with specific goals, with fantasies about the students and with intrapsychic needs and conflicts. The students also have fantasies about the teacher and the other students, personal needs and conflicts about learning, about authorities, about the issues raised in class, and they certainly have goals for the course which may be broad (learning to understand people better) or painfully specific (fulfilling a social science requirement). The movement of the class can only be understood if one looks at the process by which the fantasies, conflicts and goals of the teacher come to be understood by the students and the fantasies, conflicts and goals of different students come to be understood and appropriately differentiated by the teacher.

The classroom can be seen as one of the settings in normal life in which the continuous struggle between needs for growth and needs for security is central to the process that takes place. One of the goals of education is to help students to see events and relationships from a new perspective, with new skills. Implicit in that goal is the necessity of seeing one's old perspective as limited, one's past relationships as "determined", one's present idols or future dreams as imperfect or "relative". At least part of the resistance and discouragement that students display is the result of a reticence to leave an old point of view, an old idea of perfection, for the insecurity and confrontation which growth requires. It is the teacher's role to reassure the student that the path is worthwhile and safe, that he will not be abandoned, nor pushed faster than he can manage. Again, depending on the teacher's own needs and goals he will be of more help to some students than to others in allowing his particular course to be a means of personal learning and growth. In order to understand group B in a more complete way, we will look at six students and their interactions with Mr. B. We will focus on a particular student at the period in which he emerges significantly in the class development, noting how he fits the general trend of the students or how he deviates from the group. We hope to make clear how the interaction of the particular student and the particular teacher makes involvement and growth possible for some students but not for others.

LOU - Cluster Seven

Let us begin with Lou. He was the first student to respond to the first question Mr. B asked the class on the first day of the term. Mr. B had described his interests, his goals, and his biases. He had described the technical structure of the course. When he asked the class if anyone had any desires or interests they hoped to have covered in the term, Lou asked "Will we study any psychoanalysis?" Mr. B was pleased to answer "Yes." This interest was particularly appropriate because Mr. B had defined his own interests as being related to clinical psychology and psychoanalytic theory. Mr. B was pleased to discover that the class' interests were his interests. In those early sessions, Lou was a willing participant; he volunteered answers to Mr. B's questions, he disagreed with other students, and his remarks were usually appropriate if not always very insightful. One might think of Lou as a very valuable, supportive student who was comfortable with the class and with Mr. B right from the beginning. The only qualification we might make on that description is that Lou was anxious about grades. After a few days of exhibition and support, Lou revealed his distress in session 5. Mr. B was discussing learning and the difference between learning and performance. He had a demonstration in mind which involved the class, and he asked the class: "Do you have any questions?" (No questions). "Then I'd like you to take a pencil and paper. You can call it an experiment." At that point Lou broke in: "It sounds like a quiz." Mr. B became very upset because he had promised that there would be no unannounced quizzes and now one of his most helpful students had suspected him of not keeping his word. Lou continued to be the first to volunteer answers or ask questions, but in session 8 he betrayed his suspicion again when Mr. B tried a second demonstration with the class exemplifying operant conditioning with social reinforcement. Mr. B was angry and quite disappointed. Furthermore, the demonstration failed, which increased his discouragement. After that interaction Lou was quiet for two sessions, particularly while other students were attacking and resisting Mr. B's points of view.

Lou was the sort of student who gave Mr. B confidence that the change in structure could work. Lou's energy and willingness to argue could be relied upon to keep discussions moving. In addition, the proposed change would prevent the situations of suspicion and mistrust which Lou had perceived in sessions 5 and 8. After Mr. B introduced the proposed change in format and seating arrangement, Lou's initial response was one of concern about the grading. After Mr. B reassured him, Lou agreed that the plan was a good one. "We can always go back to the old way if we don't like it." Lou also suggested that the discussant be given some period of time to present the material without interruption before he discussion began. Mr. B responded favorably to this plan.

Thus we have a class member who was willing to participate, to initiate and to argue in class, but who resisted any threats to getting a good grade in the course. He was rarely discouraged except when the discussion was about his performance on a quiz or exam. He was eager to take on a good fight with Mr. B or the other students. Further, he seemed to know himself and to see the humor in his position. In session 20, in the discussion about participation, Lou said, "I know I talk a lot, but I don't think it's more important than other people. I'm just egocentric."

Lou not only interpreted his own behavior, he often offered interpretations to Mr. B about his behavior. In session 25 Mr. B was very disturbed about the previous session and he carried that discouragement into this discussion about the content and finally into his problems about giving a test to the class. Lou responded to this last bit of ambivalence with: "You feel guilty. You are anxious about testing us," and Mr. B replied with "Thank you, Dr. Gorman." In session 30, when the group was quite informal, Mr. B began complaining about how difficult it was to grade the class' exams. Lou commented, "You're just rationalizing", and Mr. B warned, "Lou, I'm going to make you read every one."

Lou could participate quite seriously and thoughtfully in a discussion. He also sought to take Mr. B's point of view in an argument, if he could discover what Mr. B's position was. More than identifying with Mr. B's point of view, Lou really identified with Mr. B's style of interaction. He felt that conflict was fun, but he was discouraged when hostility became personal rather than intellectual. In the fight about a mother's responsibility to her family and to her own self growth, Lou joined with the other men in asserting that the woman's place is in the home. However, when the attack became directed at one girl in the class, Lou moved to protect her.

In his interview, Lou gave his advice to a would-be student in Mr. B's class..."Read the material, participate in class, be interested, intelligent and friendly." It appears that he read the signs skillfully because Mr. B considered Lou one of his outstanding students. "There are two kinds of competence I see in that class...Lou and Libby have competence plus. Lou isn't a brilliant guy, but he has an alert, pleasant, engaging personality". Lou's concern about grades and the dependent complaining he showed on those occasions when grades were an issue remained compartmentalized. That area of concern did not interfere with the friendly relationship which was established between Lou and Mr. B. On the other hand, it is not evident that Lou gained any new perspective on the importance of evaluation or grades. Mr. B was unable to support Lou in this concern because of his own unwillingness to move too close to students or to get involved with them personally. Mr. B admired Lou and appreciated him from a distance; he enjoyed Lou's light-hearted, heroic style. He was not willing, however, to engage Lou personally in such a way as to confront the issues about grading and evaluation. Thus, even by the end of the term Lou was not able to approach this particular conflict with any new skill or insight.

CURT - Cluster Five

During the first ten sessions, Curt was one of the few students who did not score high on the anxious-dependent factor, but he was very contentious. Curt was one of the two married adults in the class. He was in the engineering school and had elected psychology to fulfill a requirement as well as to get an "easy A". Because Curt was older than all the students in the class and older than Mr. B as well, much of his early hostility was due to his defensiveness about his position in the class. For the first two weeks of the course, he never took his coat off during the class period. His participation had a belittling or condescending style, as if his age and experience gave him insight into "the real world" that no theory or mere graduate student could appreciate or alter.

Curt was involved in a struggle for authority with Mr. B. In the early sessions, he continually found objections, contradictions or omissions in the text, the lectures and Mr. B's presentations. His resistance came in the form of "what you seem to be overlooking is..." or "That explanation does not cover the case where..." He never really attacked Mr. B personally; he confined his criticisms to content issues. Nonetheless, one can infer that Curt had a need for Mr. B to be strong, directive, and controlling. In session 11, after most of the class had voiced objections and reservations about the change in structure, Curt spoke out, "I think it's time for a dissenter. I'm more interested in the authoritative viewpoint; I want to know the facts that are proven solid, not everyone's opinions." That objection touched Mr. B in a very sensitive spot because he too was concerned about covering the material and dealing adequately with the concepts. It is just because of Mr. B's ambivalence about the wisdom of this change that Curt was able to disturb Mr. B, arousing in him both anxiety and anger.

Curt was a cluster five student, rebellious but involved with the material and rather helpful to Mr. B. The helpful side began in the second quarter of the term when Mr. B relinquished some of his control of the discussion. While Mr. B was the controlling authority, Curt put a lot of energy into contradicting and attacking his position. When the structure changed and Mr. B was less directly in a position of authority, Curt switched to an expert style, often taking over a discussion or showing off his familiarity with a topic. In these sessions, Curt enjoyed engaging in controversy, then withdrawing to put the issue in perspective for the class. In one way, the change in Curt's style is part of what Mr. B had hoped for in changing the structure of the class. Unfortunately, Mr. B was not confident that he had established his own legitimacy. It was just as threatening for him to see the class look to Curt as the leader as it was to confront Curt's hostility directly.

Curt's concern with authority and control did not allow him to accept the passive role that Mr. B had assumed in the sessions after the change. When Mr. B relinquished his authority, Curt tried to lure him back into a position of dominance so that he could keep fighting. At the end of session 16, Curt asked Mr. B what his first name was. All the other students had been calling each other by first names, and Mr. B had switched from Mr. and Miss to first names after session 11. This demand by Curt was a focusing event in Mr. B's awareness of his own rȯle dissatisfaction. Curt pushed hard, but Mr. B said that he preferred to be called "Mr." In a certain sense, Curt was one of the strong forces in the class pushing Mr. B into the dominant role, even though he attacked Mr. B once he assumed that position. Curt was strong and Mr. B was at first intimidated by that strength. By session 21, however, Mr. B was convinced of his own legitimacy and he was able to resist Curt without backing off or apologizing. The group was discussing the answers to the midterm exam when the following interchange took place.

Curt:	I lost eight.
Mr. B:	You lost eight?
Curt:	It hurts.
Class:	(Laughter)
Mr. B:	Curt, you're not going to get those eight back.

Curt and another student continued to push on the issue until Mr. B finally insisted: "Can I put two pieces of Scotch tape over your mouths to hear what the others have to say?"

Mr. B was hard on Curt, almost rigid in the face of Curt's continuous contention and condescension. In his interview, Mr. B expanded on some of the fantasies and fears that may have guided his behavior toward Curt. After session 24 in which Curt and Doug argued over psychic determinism Mr. B said: "I got very anxious. I thought Curt would destroy Doug." During that session, Curt had pressed Doug harder and harder, resisting the notion that mistakes are necessarily motivated. After several efforts by class members and Mr. B to divert the discussion, Mr. B took over the discussion and claimed that there really was no conflict between Curt and Doug. Curt got so mad that he dropped his lighter while trying to light a cigarette. He sat for the rest of the session with his hands over his ears.

In another interview Mr. B said that he had given Curt an A+ on a paper, then marked off the +. "It wasn't an A paper. I was snowed by the conciseness. I may have been afraid to give him a lower grade." Still later, Mr. B asked in reference to Curt, "Do you feel people always listen to him? He is like the father sitting there." For the whole term, Curt was a source of challenge to Mr. B's competence and a symbol of the expert, task-oriented style about which Mr. B had so many mixed feelings.

After the angry confrontation in session 24, when Mr. B came in to protect Doug from Curt's attack, Curt began to shift his style. In session 26 he gave a little impromptu lecture on the role of society in the development of guilt. In session 29, after the hour exam, Curt supported Mr. B and the exam in the face of depression and complaints by many of the students. In session 31, Curt gave another impromptu lecture on primitive tribes and one on homosexuality in Greece. There were still sessions of strong resistance to Mr. B and the material, but in his way Curt began to identify with Mr. B's work style. In session 35, Curt gave a brief history of Freud's theoretical work which was quite surprising to Mr. B. In that session Mr. B began to feel that Curt was no longer an enemy, and in session 36 Mr. B and Curt became quite involved in a discussion of how to explain to a parent that his child needed therapy. Both men responded to each other without struggling over leadership, competence, or masculinity. A real sign of trust came in session 40 when Curt and Mr. B shared a joke. In all earlier sessions Mr. B responded to any joking remarks that Curt made in a very defensive and hostile way. In this session Mr. B made fun of the "starry-eyed, idealistic graduate students" who were planning to build a Utopian community modeled on Walden Two. Curt asked: "Are they going to build their own rooms?" and Mr. B rather than withdrawing or attacking replied, "I would not be surprised." It was not a peak comic moment, but it showed Mr. B's confidence and willingness to let Curt join him in his own self-mockery.

The final session was in a sense a victory for Mr. B in his relation with Curt. At the beginning of the session Curt made the point that the teacher is necessary as a source of facts and expertise. Later he added, however, that it is important to combine facts and challenge. To that point Mr. B responded, "You know, that's the statement I agree most with that you made all year." In fact, Curt had come to appreciate, through his struggle with Mr. B, the very issue which was at the core of Mr. B's ambivalence and to look on it with empathy rather than scorn. Mr. B, by neither pushing extremely hard nor by totally backing away in the face of Curt's anger, but by the compromising mediating style with which he faced hostility had shown Curt a new way to look at conflict and educational goals, at least within the context of that classroom.

DOUG - Cluster Six

We have considered two students who emerged in the first quarter of the term. Lou's performance fit the early student trend of anxious dependence, discouragement, and oscillation between contention and support; Curt fit in only because of his continual contention. He expressed neither early discouragement nor distress. In the second quarter, most of the students were still discouraged, as we mentioned earlier. Nonetheless, they tried out Mr. B's plan once or twice, taking responsibility for the course of the discussion, interacting with other students directly over the content rather than focusing on Mr. B and his point of view. Doug was one of the few students who participated continuously in the second quarter and yet had no factor scores for Enactment, only for Anxious Dependence.

Doug wanted Mr. B to be very strong. In his interview he complained that Mr. B was "letting (the class) hang in air; he doesn't tell us if we're right or wrong." In addition to his need for a strong authority, Doug had a continuing fear of being manipulated or deceived. Part of that fear was based on the reality of Mr. B's style which was very inviting and yet distant. For instance, several times Mr. B asked students if they had questions about the lecture series or about an exam question. In response to those questions Mr. B often replied: "We'll come to that later", or "Write me a note." Once Doug called him on that technique. In session 21, when the class was discussing the hour exam, Mr. B met all complaints about the items on the test with "Write me a note." Doug put in: "That's his best defense...'Write me a note'."

Doug's mistrust may have been enhanced by Mr. B's style or by the situation, but he brought much of it to the situation himself. In session 11, when the change was proposed, Doug agreed to the idea and then asked: "Does this in any way effect the little machine over there?" (He referred to the tape recorder which, as was explained to the class, was part of this study and was not related to Mr. B's plans to change the format of the course.) In that same session, after the students turned their chairs into a circle, Doug said, "I don't like it. They're all looking at me."

Throughout the first half of the term, paralleling Mr. B's discomfort, Doug remained suspicious and angry. He was not just resistant to the material, but he openly challenged Mr. B about the class structure, about the discrepancy between his goals and what he perceived to be Mr. B's goals, and about his evaluation of the class discussions. In session 14 Mr. B began asking leading questions to get the class to see some point about the material, but no one was able to give the right answer. Finally Mr. B said: "I wonder what you think I'm getting at," Doug replied, "I don't know, why don't you tell us?" In session 15 Doug and Mr. B had a very serious altercation about Doug's anger about his grade on the quiz. Mr. B, rather teasingly, began the discussion of the quiz with "Ok, let's have the bomb fall" and sure enough, it fell. Doug was certainly the leader of the expressions of helplessness and betrayal, but other students joined him in one point or another. Doug used many tactics to try to pressure Mr. B into a stronger position and to force him to clarify the exact demands of the course. His efforts were always focused on Mr. B's responsibility to the class; they were both guilt inducing and dependent in an angry way. Doug began with, "We're not sure what we're talking about", then, "I hope we're not an experimental group", and finally, "I'm more concerned with my grade point than with learning." Mr. B responded at first by accepting Doug's anger and trying to convince him that he did not mean to be punitive or rigid, that he was in fact on the students' side as far as grades were concerned. After continued probing, Mr. B responded to Doug with the kind of strength Doug had been pushing for, but he also responded with another message as well. Mr. B made it clear that to him it was not enough to sit and take notes, that students as well as the teacher had to take responsibility for the class. The interaction made many of the other class members very uncomfortable and angry with Doug for having pushed Mr. B so far. Finally Peggy broke in: "Could we quit talking about the quiz? We're not getting anywhere."

Doug's anger and frustration faded after his conflict with Curt in session 24. Curt was carrying out his own struggle with Mr. B over the legitimacy of Mr. B's control. Doug, who had volunteered to be discussant on the subject of psychic determinism in psychoanalytic theory, was caught in the trap of maintaining his position as discussion leader and his allegiance to the subject matter in the face of Curt's attack. The encounter between these two represented one of the continuous struggles in that class; Doug, the dependent student, who believed in Mr. B's legitimacy and pressed for him to defend it, against Curt, the counter-dependent student who challenged Mr. B's legitimacy and threatened to replace him as the class leader. In this conflict, Mr. B took his stand to defend Doug, thereby asserting the validity of the conceptual notion of psychic determinism and reasserting the legitimacy of his authority or the authority of any class member who assumed the role of discussant in his place. On a more interpersonal level, Mr. B's intervention was a signal of closeness and acceptance to Doug. It was a message that Mr. B had not abandoned Doug to an environment without control or order. During this third quarter, Doug joined the pattern of class participation, a vacillation between enactment and distress which was accompanied by Consent, Low Discouragement and Low Challenge.

The outcome of the interaction for Doug was the development of a strong allegiance to Mr. B. When issues were being argued, Doug always supported Mr. B's position, particularly if Curt was attacking that position. However, for Doug, there were still moments of unresolved suspicion and longings for a powerful authority which were expressed symbolically in the last quarter of the term as they had been expressed openly at the beginning. In session 31, the group was discussing techniques of punishment and their values. Doug's position was that "you have to make a child feel guilty to develop a super-ego" and that "children can't function without control." In session 32 Mr. B was lecturing about professional opportunities in psychology and Doug began to criticize the way psychologists use advertising against people. In session 35 much of the same kind of challenge took place while Mr. B was describing therapy. Doug interrupted: "I have a violent objection! It's all a luxury. It's a fraud." Mr. B had set the stage for that objection by beginning with how expensive therapy can be, and Doug picked up on it. Mr. B handled his objections first by trying to ignore Doug, although he was waving his hand frantically to be called on. When Doug persisted, Mr. B cut Doug off by correcting his use of the term neurotic, thus moving into an expert style, away from opinions and value judgments to "facts". In a later session, Mr. B again used the technique of ignoring Doug when he insisted on interrupting Mr. B. The change that took place for Doug was in his acceptance of Mr. B's competence and his willingness to work on being competent in some area of Mr. B's interest, psychoanalytic theory. Doug never relinquished his desire for Mr. B to take more control, to give more material, but his solution, as he stated in his suggestions to a would-be student in Mr. B's class, was to do the reading and get the information on his own. What he began to appreciate in the class was the free informal atmosphere (although he added that this atmosphere is "valuable but overdone") and the expectation that one should give one's own views on a subject, that one's personal views are legitimate.

Mr. B recognized Doug's efforts to deal with the content. He mentioned that he thought Doug was the student most in tune with the material. Mr. B also sensed the fading of anger from the second to the third quarter of the term. In an interview around session 27, Mr. B remarked that the aggression had gone out of Doug's voice. Unfortunately, Mr. B was not able to respond directly to Doug's strong needs for authority except by opposing or ignoring Doug. Doug's demands were antithetical to the ideal goals Mr. B had proposed to the class. In the early part of the semester, Mr. B had reacted to Doug's demands by feeling guilty and depressed; later he got angry, and finally he ignored Doug or withdrew from any personal confrontation with him. Doug ended the term respecting Mr. B's competence, annoyed at his lack of strength, and still suspicious that the class had been an experimental group in a study that Mr. B was doing.

LIBBY - Cluster Three

As we mentioned in the discussion of the group development, the students were sending at least two kinds of messages during the second quarter of the term which supported Mr. B's confidence and allowed him to feel comfortable in resuming control of the class. One of the messages was distress and helplessness, but the other was student competence and the ability to be independent. Doug was an example of someone who was pushing solely on the first issues. Libby is a student who responded in both ways. One can assume that it was her distress which moved Mr. B during those sessions more than Doug's, because Mr. B recognized that Libby was quite able and willing to do serious, valuable work.

Libby was an attractive girl; she was able to respond both emotionally and cognitively to the issues discussed in class. During the early sessions, she did not participate often, but Mr. B was well aware that she was in the class. On two occasions, he called on her when she was looking at her pencil or raising her hand to brush aside her hair. In those early sessions Libby gave only a hint of her ability and her wit. In session 9 she began to criticize Freud's thesis in Moses and Monotheism, giving evidence of her familiarity with psychoanalytic theory as well as her willingness to criticize authorities. In session 10, when Mr. B asked for an example of a hypothetical construct, Libby answered: "God." It seemed that she enjoyed being strong and assertive. One might identify a tiny drop of sadism in those moments when she shocked the class. On the other hand, Libby was able to be extremely sensitive and touched by class issues. In a discussion of Jordi in session 12, Jordi's fears became her fears as she described them. She became very involved in identifying with his world in order to understand it.

Libby had volunteered somewhat reluctantly to be a discussant with Lois on the unit on perception. As was described earlier in the chapter, that session went badly, mostly because of the unwillingness of the class to become involved in the material. The male students seemed very restless. Both Libby and Lois began having difficulty pronouncing words, and they kept looking to Mr. B for help. For a while Mr. B remained quite passive, apologizing for intervening. Although students participated, they were not talking to each other or concentrating on the material from the readings. There was much irrelevant quibbling. Finally, Mr. B gave a summary of the material and complimented Libby and Lois for a fine discussion. That was when Doug broke in to say what he thought of the discussion. That session was one of the strong influences pushing Mr. B back into a more active role. In session 18, Mr. B tried to focus the class' attention on the progress of the class and their reactions to it, but as we saw earlier this effort was subverted. Libby and Lois were discussants and Libby began to be very annoyed when the problems of getting the class involved repeated themselves. Finally Libby went back to Mr. B's request to look at the problem. "Well, if you're not going to talk, do you have anything to suggest about how to improve the discussion?" Her efforts were also subverted by Dave's request to discuss Gestalt psychology. The result was that Libby and Lois became very discouraged. They continued to look for help from Mr. B who was equally discouraged. When Libby asked him to give a summary, he said that there was no time and everything had been mentioned.

It seems that Libby was caught up in a task role while the class was still struggling with issues of legitimacy and mistrust. The midterm exam was coming soon, and on the basis of their experience with the quiz, there was doubt and anxiety about what questions would be on that exam. Further, Mr. B was still very unsure about how much control he should exert and he was reluctant to intervene, even to facilitate discussion.

In the third quarter, Libby ran into further difficulty with the class. That period was characterized by Consent, Concealment, Low Discouragement, Low Challenge and Unresponsiveness. Libby disrupted the class by challenging the notion that a mother's first responsibility is to her children. In the face of that challenge, some students became angry, some were anxious, and Libby was discouraged. The issue was mothering and the discussion centered on the potential harm versus the potential benefit to children of having working mothers. Libby's position was that a mother's life is as important as her children's. If it could make a woman feel fulfilled to work and have a family she would probably be a better mother if she worked than if she had to stay home all day with her children. The males in the class interpreted her position to mean a rejection of the responsibility of a mother. Curt's response was: "If you don't want to stay home, get a dog." Doug argued, "My mother was overprotective, but that's not as bad as a lack of attention." Libby tried to explain that a child who knows his mother works will look up to her as much as to his father. To that, Ned argued, "Well, Libby, I want a father and a mother, not two fathers." Peggy broke in at that point, "That's because you are a man, not a woman."

If we look at the relevance of this discussion for the relationship between Mr. B and the students, it seems that Libby was maintaining, albeit indirectly, a teacher's right to be independent, to be a person, and to leave some of the responsibility for growth to the students. Those who disagreed seemed to be pushing for Mr. B to assume the full responsibility of the traditional teacher, to fulfill the role expectations of authority, expert and evaluator. In their minds, for a teacher to act out of his own needs was inappropriate.

Mr. B took over the discussion without committing himself to either position. His response to the discussion was: "Boy, have I got a great idea for an essay question." In part, that was his way of moving past this delicate subject. In part it was a way of legitimizing the discussion of those issues without having to reject or accept either point of view.

In session 23, Mr. B brought up the issue of the previous discussion and for a while the whole controversy broke out anew. Finally, Libby tried to explain her point of view, and then she apologized for having wasted class time on the issue. In her interview she said, "The class was annoyed with me. They thought I talked too much." Mr. B tried to protect Libby from feeling guilty about the discussion by saying, "It wasn't bad that it was confusing." On the other hand, he did not want the discussion to continue, so he began to lecture.

Libby participated in session 24 by offering an interpretation of a dream of a tree in a hole as penis envy. The class got very anxious at this interpretation, and Doug resisted that as the sole interpretation. Mr. B was forced to accept Doug's resistance rather than to reinforce Libby's contribution, particularly because Doug was to be the discussant that day. Libby did not participate in class discussions again until session 29, at which time she expressed distress about the hour exam.

That series of events should explain Libby's membership in cluster three. She was a capable student, involved in the material, and willing to offer her opinions. Unfortunately, the class was not ready to move as quickly as she was. Mr. B felt obligated to put his energy into protecting or encouraging the students who were less advanced or less comfortable. In some cases, students clearly communicated discouragement or apprehension at her openness.

Libby dropped out as an active participant during the third quarter of the term, but she reentered in the last week. In session 39-41 Libby joined the second student enactment period. She was able to express concern about the material and to be supported by a male student in that concern. Later she was able to offer support to a distressed male student by putting the notion of determinism into perspective so that it did not imply an absence of freedom of choice. When the other students were ready for honest interaction about issues without being pressed to relate to Mr. B or to struggle over control, Libby was an effective group member. Earlier, however, she was a threat to many students and a source of discouragement to Mr. B because he saw that he was allowing her to slip away.

In her interview it was clear that Libby had made the distinction between Mr. B's acceptance of her and the class's unwillingness to work. About Mr. B she said, "He never gets aggravated with people who interrupt. Nobody feels deprived or lacks attention. He is interested in everybody. My English teacher laughs at all our opinions. Mr. B never laughs at us." Mr. B had equally good things to say about Libby: "Libby is bright, sharp, creative, aware, perceptive, intelligent, spontaneous. I can't respond to her. She's just gotten it, and I have nothing more to add." Mr. B saw a comparison of Curt and Libby as the conflict between working with the structure and "going beyond". Perhaps we can say that Mr. B's decision to work with the structure may not have allowed him to give much to those who were ready to "go beyond", but at least it allowed students like Libby the freedom to move and interact within that structure.

MARY - Cluster Seven

We have already pointed to the third quarter of the term as a period when Mr. B was becoming increasingly comfortable with his role by maintaining a more formal, distant relationship with the students. At the same time, student discouragement ended, although there was still a residue of hostility and distress expressed by the students in the process of dealing with the course material. Mary was one of the students who worked hard during this period to establish a satisfying relationship with Mr. B. Mr. B's efforts at distancing himself made her uncomfortable and she tried to find a way to move closer.

A real conflict in needs can be seen in this relationship between Mary and Mr. B. Mary wanted to have a feeling of personal closeness, or intimacy, with Mr. B. Her remarks in class were very dependent. She continually looked to Mr. B as the person who would know the "real" answer in the case of an argument. In her interview, Mary complained that in session 22, when the argument arose about mothers working ,"Mr. B didn't say who was right." Mr. B on the other hand, was very concerned about dependent students. They represented a threat, a drain on his energy. As he described a relationship with another student in the class, its application to Mary seemed obvious. "He thinks I'm concerned about his welfare. The more I talk to him, the less I should be talking. I wouldn't want to move beyond feelings relevant to the class. Maybe I should pull back a shade."

The other source of conflict, beside Mary's need for closeness, was her willingness to attribute great power to Mr. B. In session 30, after the movie failed to arrive, Mary asked Mr. B if he would psychoanalyze those students who stayed. Mary also felt a lot of anger toward Mr. B when he failed to

EVE - Cluster One

We described the final quarter of the term as a period of productivity, consent, and low discouragement for the students. It must be remembered that some students continued to express distress during this period, particularly around the issue of the final exam. Nonetheless it seemed appropriate to choose a student who emerged as competent and self-assured as the final group member to be discussed.

In session 27, Mr. B asked for a discussant to cover the book The Magic Years by Selma Fraiberg. He asked for volunteers but no one offered. Then he asked Todd, who had promised to be a discussant some time, but Todd refused. Finally he asked Eve who fluttered and got very anxious, but finally agreed to do it. Her discussion followed the meeting when the movie did not come, and the class was eager to interact. Eve focused on the issue of punishment and its relationship to guilt. At one point, Mr. B took over the discussion and Eve began to disagree with him. Perry had begun to argue that children are born with guilt; they do not need to be taught it. Eve tried to show him how he was wrong. When he recognized his error, she assumed Mr. B's style of saying that he was not completely wrong. Another issue Eve opened up for discussion was the development of sex role identity. Katy offered a personal example of this issue by describing the relationship her father had with his siblings. Eve began to analyze this example in terms of Katy's father's feelings about women when Mr. B stepped in rather anxiously, to change the subject.

Eve was naively comfortable during this last period in the class. She felt free to ask whatever questions of Mr. B she wished, sometimes without thinking of the position it put Mr. B in. In session 35 during which Mr. B was discussing therapy, Eve asked, "Would we all need therapy?" She had a tendency to break in to Mr. B's rather independent monologues to ask a personal question. In session 36 Mr. B was trying to define normality when Eve asked, "Are you saying that bad migraines are a neurotic symptom?" Mr. B always responded to these efforts by avoiding the specific examples, moving to a more general level of response. His message was always that he was reluctant to use personal examples, even when the nature of the issue would have made personal examples appropriate. Eve was in no way sensitive to this concern on Mr. B's part. Out of her own curiosity and interest in the kind of problems raised in the course, she regularly touched on one of Mr. B's conflicts.

In a certain way, one might see parallels between Mary and Eve. Yet Eve's progress through the course was considerably more satisfying to her and to Mr. B than was Mary's. Eve described her early anxiety about the course and about her own ability in her interview. "At first I was so afraid to say anything. I came up here and I thought I would flunk out." That she changed from low self esteem to a feeling of being comfortable in the class, on an equal level with the other students and unafraid to be herself, is undeniable evidence of personal growth. One very likely reason for this successful experience is Eve's willingness to enlist Mr. B's support. She went to him early in the term "because (she) didn't know what was coming off." She did well on the first quiz and she felt a sense of improvement in her ability to deal with the material. She was also convinced of Mr. B's concern for her. "He knows that I'm trying a lot." Further, her notion about Mr. B's concern was well founded. In his interview after Eve's report he said that he was "alert to having to support her." He felt her anxiety during the whole class period and he tried to let her know that she could count on him.

It seemd that Eve's kind of dependence did not anger or frighten Mr. B. Eve was a bit helpless at first but she was not challenging. She was very open about her anxiety and about her feelings of low self esteem. She came to Mr. B for help but she did not pressure him into giving it. As a matter of fact, Mr. B might very well have felt some obligation to aid Eve because of the way he responded to her very early in the term. In a desperate effort to explain the difference between classical and operant conditioning in session 7, Mr. B pretended to teach Eve to read. "Whatever Eve did, I would say: 'Very good, Eve.' Even if Eve threw erasers at me, I would say: 'Very good, Eve.'" Throughout that exhibition, Eve sat practically motionless, having no part in the example at all. Afterward, Mr. B felt badly about having used her so directly in such an uncomplimentary example. In any case, that incident did not discourage Eve, and it may have increased Mr. B's commitment to helping her.

The most important part of Eve's development during the semester was her ability to look critically at herself. Her confidence in Mr. B, in his motives and in his concern for the students, allowed her to see her own participation in the class in a new light. In the last session, when Mr. B was apologizing for the lack of clarity and structure, Eve tried to tell him that the technique had been successful. "It gave me a chance to see my own dependence and to know how bad it is, I'm glad to have seen it." In that comment Mr. B's decision to change the format was justified. Eve represented the successful integration of task involvement and emotional sensitivity that Mr. B had hoped for but had been unable to manage with the entire class. It seems that his personal support outside of class and Eve's willingness to invest in this experience allowed her to grow in a way that was only reflected in fragments for the rest of the class.

We have looked closely at six students from five of the seven clusters. These students are a small example of the varied demands made upon Mr. B throughout the course, demands for colleagueship, for expertise, for strength, for affection and for support. Further, it should be clear that the needs of different students emerge at different periods in the semester. Sometimes Mr. B was able and willing to respond to those needs, sometimes he was unwilling, and sometimes willing but unable. Students like Doug and Mary, who had continuing needs for a strong, controlling authority and who were jealous of the other students, could not find satisfaction in their personal relationships with Mr. B. Nonetheless, they did grow to appreciate what Mr. B was trying to do with the class. The challenge to Mr. B's competence, and legitimacy which was presented by Curt, was not so devastating or destructive as constant demands for control and nurturance. Curt and Mr. B were able to work out a kind of mutual respect that went past the stereotyping in which they both engaged early in the semester. The greatest successes, perhaps, were with students like Eve who trusted Mr. B and could exchange their support of him for his support of them. The interaction between Mr. B and these students had a friendly, but not intimate quality. These students did not challenge Mr. B intellectually, nor did they press him about his authority. They accepted his goals and tried to reach them.

The most unclear and incomplete relationships were those between Mr. B and Lou and Libby. These students, and others like them, were left to struggle through very much on their own. Mr. B felt that he had no more to give them, but perhaps that was due to the kind of demands that the more dependent or angry students made on him. Because of Mr. B's own doubts about how much authority he ought really to have asserted, claims for control or threats of subversion of his control demanded a lot of his energy. Students whose needs were simple, who required some trust and some freedom to become engaged, did very well. Students like Lou who were able to interact in a well-defined role without dealing with their various conflicting needs became trapped into that role and were never known any more authentically. Students like Libby, who were willing to move quite far with the material, but who were also sensitive to conflicting responses from Mr. B and the students, were likely to withdraw. In some other class, where the emphasis was on another style of interaction and other tasks, perhaps these students would have been central class leaders and students like Curt or Doug would have been passed by with a minimum of attention.

The study of group B has provided a detailed description of Mr. B's use of a wide range of strategies to create a comfortable role for himself in the classroom. The study also focused on the interactions between Mr. B and several students in their joint efforts to satisfy both task and affect goals. Mr. B's tendency to move rapidly from one strategy to another engaged most of the students in the task goals. However, his shifting of roles caused Mr. B a great deal of emotional stress and forced him and many of the students into role rather than personal relationships. Nonetheless, Mr. B's style served the class as a model for flexibility, openness and compromise which allowed the students to develop into an accepting, supportive group, able to deal intelligently with difficult issues and to express emotional responses to those issues without feeling self-conscious or belittled.

The uniqueness of Mr. B's style and the individuality of the students described here gain in depth when seen in the perspective of the concerns and conflicts common to all four classes. One might wonder if the issues of student distress, Mr. B's role dissatisfaction or the struggle between needs for control and values of independence create the same interactions between the students and the teacher in the other three groups. What are the skills a teacher brings to the class that might facilitate dealing with early mistrust or prevent the persistence of student discouragement? To what extent are periods of anger or exhibition necessary in order for work to take place? Do all teachers use control destructively as well as constructively? In chapter seven, these and other questions about the general process of group development in the classroom will be considered.

Chapter V - 7

The Natural History of the Classroom

Now that we have presented some of the intricacies of the developmental history of two classrooms (in Chapters Three and Six) it would be interesting to widen our perspective once again to include all four of the classes in our sample. The kind of questions we wish to ask ourselves are: Are there uniformities in the way teachers alter the stresses they place on various aspects of their roles as the term proceeds? Do the members of the various student clusters have their periods of greatest Enactment at similar phases in the development of all classes? Can we find meaningful similarities in the developmental patterns of all the classes?

Each classroom, of course, has its own peculiarities. There are the various teaching styles and personal histories of the individual teachers, the differences in composition of the group of students, the variations in the structures the teachers impose on the classroom situation, and even such realities as the time of day at which the class is scheduled to meet. Also to the point is the relative success of some classes in the eyes of their participants and the relative failure of others. However, our hope is that if we may somehow transcend such unique circumstances as Mr. A's mid-term desertion of his class while he participated in a civil rights march, Mr. B's particular problems in dealing with a cynical older student, or the fact that Mr. B gave four hour exams to Mr. D's one, we will be able to delineate a few developmental trends common to the classes. In a sense, we are looking for some of the common themes around which the individual classes create their own unique variations.

One aid in this search is the category scoring of single sessions, combining all student acts on the one hand and all teacher acts on the other. First, it was determined what percentage of the total acts fell into each of the sixteen member-leader categories. This array of percentages was then converted into factor scores, seven for teacher and seven for class for each individual session. Finally, these scores were standardized within each of the four classrooms so that they would have a mean of zero and a standard deviation of one for each of the classrooms. This strategy serves to obscure differences between classes in the total frequency of a given pattern and allows us an easy comparison between developmental trends in the four classrooms.

When we plot for each classroom the fourteen factor curves from the data as prepared above, we are first struck by the wide swings from session to session, and it is certainly not surprising that major developmental trends do not fully determine the events in a single session. Various events, such as the handing out of an assignment, the surfacing of some issue which is particularly important to an individual student, or the teacher's depressed mood deriving from some problem external to the class caused many deviations which do not reflect the dominant momentum of long-term trends during that period. An additional process which often causes such swings is the teacher's occasional tendency to try to balance the extremes of one session by going to the opposite extreme in the next.

Despite these short-term swings, the factor scores do reflect definite developmental changes. In order to make these clear, we have transformed the data by means of two additional steps. The first of these is the computation of four-session moving averages. This operation consists simply of pooling the scored data for sessions one through four to form the first data point, then pooling sessions two through five to form the second data point, then three through six to form the third, and so on. This has the effect of smoothing out the factor curves by muffling unique, but transient, effects.

In order to obtain a still clearer picture of long term deviations about the mean, we further transformed the moving average data points for entry into the charts seen in Tables 7-1 and 7-2. In these figures, we have given each data point which received a score greater than +1.00 (that is, any score more than one standard deviation above the mean) the designation ++. Scores between +.50 and +1.00 receive only one +. Similarly, scores lower than -1.00 are represented by --; those between -.50 and -1.00 by -. Finally, data points scoring within half a standard deviation of the mean are left blank.

The advantage of such a picture is that it allows us a very quick and direct comparison between the four classes. Thus, without reference to the actual height of the curves during that period, we can see immediately that all four teachers begin the term on a note of higher than usual Apprehension, that this lasts longer in some classes than in others, but has dropped into a stable period of low Apprehension in all four by the fifteenth data point. We can also observe more general trends; for example, while the periods of occurrence do not exactly correspond, all four teachers register much greater Role Satisfaction during the second half of the term than during the first. It is also possible to distinguish individual deviations from common developments, as when we see that a general trend toward a non-punitive stance in data points 25 to 39 is broken by Mr. A's burst of Punitiveness around point 30. Such developments are much easier to discern once the factor scores are standardized and moving averages are computed.

The tables suggest an affirmative answer to the question whether we can find important developmental similarities across all four classes. Similar trends arise at similar periods and override many of the individual differences that are present. This is, of course, more readily evident during some periods than during others. For example, the early phases with the near-universal loadings on Role Dissatisfaction and Apprehension for the teacher, and Contention, Support and Exhibition for the total student group allow us to infer that similar issues and reactions to those issues preoccupy all our classrooms soon after their inception. However, differing rates of development lead to a temporal skewedness which obscures later similarities. All four classes exhibit a

TABLE 7-1
Factor Scores for Teachers by Moving Average Blocks by Group

```
F   C
A   L
C   A   1 2 3 4 5 6 7 8 9 101112131415161718192021222324252627282930313233343536373839
T   S
C   S
R

I   A         -   -  +++++++ +   -------          -----  + +++- ---- - - + +++ + + + -
    B   -  +  - - -               ++++++++++ + + - +   - -- - -  +   ------------     ++
    C   + +++++++++++ + +                  ++         - ---- -- - -- --- -          - -------
    D     + + +++++++++++++                 + + +   - --         - -------- --  - -------
              Reactive                                       Proactive

II  A   ---------- - --------   + + + +++++++++++++ + +  -  - -        + + + +    --
    B   ---------  -  - -  - - - - --  --      + +++++++++++++++          +  + + --
    C     ++           - ----------------------          + + ++++++++++++++++  +
    D   ---------- - - - ------ -                  -   ++++ + ++ + ++++++++ + + ++++
           Role Dissatisfaction                          Role Satisfaction

III A   ++++    - -   + ++++++   -- - -- - -    -       +++++++   - - -   --------- +
    B    + ++++    -                         -------- - - - -    + ++++++      - --    ++
    C   ----------- -        - - - ---------- -      + ++++++++++++++++++++++   +
    D    + + + - -  - - -    + +++++++++++           - -------   + +   ----   ---
                                           Formality         Colleague

IV  A   - - - --   -  + ++++++  -         -        -     - -    -   -- - -- ++++++ - +++
    B   ++++- - - -   + + + ++++++++ + + ++        -- ------  -  - - -   ------      --
    C      -        +       + ++++++++++++ +    + + +   - ------------- - -----  --  --
    D   ++++   -    -      - - -          ++++++++        ---------- -          - -
                            Punitive                             Non-Punitive

V   A   ++ + +++   - --       -       - - - - -      - -----        +   ++ + +     +++
    B   +++++++ +     + + +    -    - - -       - - - - --------- - -   -          +
    C   ++++     - -  +  + ++       - - - - - - - -      + ++++++     ± ± - - -----------+
    D     + ++++++++  + ++++ +  -    +    ------     +    -- -           - -- - ------
              Apprehension         Low Apprehension

VI  A   + + - ---     ++++++++++        +      -      - -        -   - -------      --
    B                   ++++++++      + +   - - - - ---- - ---- - -- -           + + ++
    C      - -- - -- + + +        +     -- - -       -      - - -          ++++++      ++++
    D           -    -++  +  ++++++         + + ++ + -     +++        - ---- - -- - -
                                Display

VII A   ++++ +    + -  + ++++++++ +        - - - -         - ------          - - ----    --
    B   ++  -------- - -        +        + + + + + + + + + + +       - ------ -  - -  + + +
    C   ++ + + + + ++++++++ +         - ------ -     +   - - -- - -   --- - - - + ++ + - -    ++
    D   - - - - -- - --          - - ++++++++ + + +          - -- - -
                Warmth                                        Low Warmth

        1 2 3 4 5 6 7 8 9 101112131415161718192021222324252627282930313233343536373839
```

Key

++ =>+ 1.00 Standard Deviation from norm
+ = .50< t <+ 1.00 S.D. from norm
- = -.50> t> -1.00 S.D. from norm
-- = <-1.00 Standard Deviation from norm

TABLE 7-2
Factor Scores for all Students by Moving Average Blocks by Group

```
F   C
A   L
C   A   1 2 3 4 5 6 7 8 9 101112131415161718192021222324252627282930313233343536373839
T   S
O   S
R

I   A       +   + + +    --------   ++++++++ +  --   + + +  -------- -     ++
    B   ---------------- -  +      + + ++ +     +           + + + +        + ++++
    C   ++++        - -- - - - ----    ++++    ------ - ++      ++++++++ +        -
    D   - -     +     -  ----  ++++++++  +  -- -   --                  +
                     Anx. Dep.    Enactment   A.D.               Enactment

II  A   -- -  ---- -      +           +      ++++++++    --++--  -- + - -------+
    B   ---- - ----------- --          -      +     -      + +  ++++ + +++ - - + ++++++
    C    + +                           + - -------- + + + + + ++ + +++++ + +  + ++ ----++
    D   ------ -    +                  + ++ + ++++ + ++ -        +     +    -------- + +
          Contention                                        Consent

III A      -    - -   + ++++++  + ++  ---- - - -   ------ ++ + + + - - - - - - - -
    B   ----------     +           ++++++++++++++  --- - -  -  - -
    C      - - - ----                   ------ ++++++++  - - ++ + + ++---     + ++
    D              ++++++++++     - ---     + +     -    -----   - --------
           Open    Concealment

IV  A   - - ++++++++++ +      - - -                - + + + ---            - - - - - -
    B   --   + + + + + ++++ + + ++++++ + ++++++++++ --------     - -   - -   - - - -----
    C      - - - - -      + - -   + ++++++++     - -  - ++++++++---- -     - ---
    D   ++++       -- -          - -     ++++          + ++++++ + - ---- - - - - ------
                                Discouragement                     Low Discouragement

V   A                 - -   -       + +    - -    -- - -   ++++++ + +      - - -
    B   ++++++ + + ++++++                     - -- -  +   - ----- ------ - + +        ---
    C   ---      +    +          ------    +  - - + + ++  --+++ + ++---   + +
    D   ++++ + + ++++++++     ----         -  -- - -   - -- - -   - ---------
             Challenge

VI  A   ++++++ + +     +    - ------ + + + +    - -    - - - -                    ----
    B   ++++ + ++ +  + ++ + ++ +        -------- -  -    - - -  ++ +            -------
    C    + + + + + + +++++  +          +       + + ++++ +   -    - - - - --  --------      -
    D   + + +   ++++     ---- -      + + - - ----  --------   + ++++  ++++++
             Support                                                           Unrespon.

VII A   ++++++ + + +++++ +    - - - - - - -  - ---     - ---- -                  - --
    B   ++++     ---- - - ++++++++     - + + - -               - -      - - - -
    C   ++++++++ + +                 - - -      - ------ -          +     - - - -- --
    D   ++++++++++++++++     - ---- - - - - -- - -- -   + + -   -   -    -   -  ---
            Exhibition

        1 2 3 4 5 6 7 8 9 101112131415161718192021222324252627282930313233343536373839
```

<u>Key</u>

++ =>+1.00 Standard Deviation from norm
+ = .50< t<+ 1.00 S.D. from norm
- = -.50> t> -1.00 S.D. from norm
-- = <-1.00 Standard Deviation from norm

conjunction of punitive teaching with student discouragement some time after the group's opening phase, but this begins much earlier in Groups A and B than in Groups C and D. Finally, the impending end of the group again raises issues common to all four classrooms at an equivalent time period and gives us some more obvious correspondences in factor development than are to be found in the middle parts of the term.

What we would like to do now is to use the most dominant trends apparent in the tables to paint a composite picture of the developmental history of a typical classroom. To do this, we must ignore for the time being many of the individual variations which give each classroom its unique flavor and concentrate instead on the similar trends and on some of the processes which cause them. From time to time, we will pause in our account to report on individual sessions which typify processes occurring at a particular period, which allow us to view the teacher's actions in the light of the teacher-as typology, and which illustrate the manner in which the classes vary despite this sharing of many common trends. For simplicity, we will continue to lump all students into one group average for the time being; later we will consider what part each of the student clusters play in this drama.

The first phase

We start our account where the classrooms themselves start, with the first session. Our teacher sits at the front of the room as the students dribble in the door in ones and twos; he waits for a full enough complement to start the class formally. Perhaps he has written his name, office hours, or the like on the blackboard. He is nervous; in a few minutes he will have to start performing before this crowd of strangers; a false move, he fears, may start things off in the wrong direction. He looks around at his new charges, rehearses mentally the things he will say, and attempts to look calm.

Most of the students arrive earlier than they ever will again during the term. They sit attentively or they slump down, perhaps with a notebook turned to its first white page, surveying the room, looking out the window, trying to size up the teacher, wondering what the course will be like. As in any new meeting, both parties take a rather defensive stance, carefully maintaining routes of possible escape in case of disaster. In the first few sessions, this need on both sides for unhindered movement will exhibit itself in a tentativeness of action, a tendency to hedge excursions into any one role with seemingly casual references to other possibilities, a willingness to try out incompatible roles and strategies in an attempt to find one that is both successful and comfortable. We encounter here the most fluid period of classroom life, a time marked by a tendency to extrapolate the smallest bits of interaction into momentous portents for the entire future of the relationship.

At some point in time, the teacher formally initiates the class. If he is at all like the four in our sample, he will start by presenting himself as a formal authority. Apparently, the first order of business is to establish control, to get things moving on the right foot. He introduces himself, calls the role, goes over the reading list, starts talking about what he plans to do in the course and what he will require of them. To a large extent, his major aim is to give the students as many clues as possible to what he expects from them. Besides helping him establish control, this strategy may relax some of the tension the students feel in the face of an originally undefined situation.

Woven through this long burst of formal detail, however, are a number of other strategies and messages. For one thing, the teacher is hopeful of producing a friendly, accepting feeling in the students. His main attempt at fostering such a climate shows up in frequent expressions of Warmth. Even as he tells the class how he intends to set things up, he constantly takes steps to reassure them that he isn't the distant, demanding figure he may seem to be; rather, he is a friendly person who is personally interested in them and is on their side. His main object here is to enlist support, but he may also, at this early stage, be trying to placate the hostile and disapproving strangers his more fearful fantasies make the students out to be.

One outstanding example of such an interaction occurs during Mr. B's presentation of the reading. "I wouldn't buy Hilgard, if I were you," he informs the students. "We'll only be reading a few chapters of it, and I'm sure Mr. Hilgard can get along without the money." With this statement, he distances himself from the textbook-writing authority and identifies himself with the students whom he sees as hostile and resentful toward such authorities. One implication of such activity is that the teacher is intensely ambivalent toward the students. They, in turn, may sense this, and many hold themselves aloof from laughing at the teacher's early quips or appearing easily won over. And indeed, although the teacher continues his protestations of Warmth during his act of detailing the courses' structure, he may also display a variant of Punitiveness by letting drop the implication that he assumes in advance that the students will be sluggish and balky in the matter of meeting the requirements he sets for them.

In addition to needing to establish control and to impress the students favorably, the teacher also has a need to get to become better acquainted with the students. He will have to understand them to teach them effectively, but there are other factors involved as well. For one thing, once the students actually begin talking for themselves some of the teacher's fears about what they are thinking will no doubt be dispelled. In addition, there is a problem that the relationship might become too one-sided. Thus far, the teacher has done all the talking. Its time to let the students have a say and become involved through active participation.

Our teacher's manner of first prodding the students to speak was to involve them in a discussion or exercise concerning the nature of psychology or science. Mr. A, for example, set up a card game which involved the students in hypothesis testing, then asked them to discuss what they had learned. Thus, the students had their first statements patterned by their socialization into the field of psychology and the teacher's perspectives on it. The teacher thus turns more reactive and facilitative without, as yet, relinquishing his almost total direction of the class.

As the students begin to talk more in this and the next few classes, it is obvious that, like the teacher, they too desire to gain some control over events, become known and liked, and better acquaint themselves with the teacher. They, too, strive to find a confortable mode of existence in the classroom. The students' problem in this case is not as acute as the teacher's though, for an individual student need not remain in the spotlight the way the teacher must. If a student decides early in the term that he does not want to play the sort of role he had originally planned for, he may change his stance much more easily than may the teacher.

The desire of some students to have a say about the ultimate direction of the class shows up in common early tendencies toward Contention and Challenge. Students engaging in such behavior wish to demonstrate from the first that they will not sit idly by while the teacher assumes total dominance and superiority. At the same time this is happening, however, these and other students are contributing to large early scores on Support. This behavior on the students' part appears to be motivated primarily by their attempts to gain the teacher's favor and to make their own contribution to starting the relationship off on the right foot. Many of the teacher's expressions of Warmth during this period are attempts to solicit support, and he typically receives the desired response. This early Support, however, is likely to be no more deeply based than the teacher's Warmth.

Our chart shows us two other common tendencies for students in the very early classes. The major one is the high scores on Exhibition found in all four classrooms. Again, in large degree, this performance parallels the teachers' Warmth as a strategy for getting things off on the right foot by winning the other's favor and presenting oneself as confident, likeable, etc. In the students' case, of course, we have the added factor of individuals jockeying for a favorable position vis à vis their fellow students. Teachers often welcome such patterns early in the term for their value in getting the student group talking and participating despite the fact that the same kind of showing off may become a block to productive discussions later in the term. A related early trend for the student group is their low scores on Concealment, reflecting an apparent willingness to present themselves openly. This would seem to tally well with a great deal of Exhibition and with the responsiveness mirrored in Support.

Thus we have the outlines of our picture for the actions of the student group as a whole during the first few sessions. In general, those that do the talking act very involved and seem concerned with showing off their intelligence and right-thinking acceptance of what the teacher says. At the same time, there is an effort made by some students to show the teacher that they are not meek, powerless followers, that they are ready to oppose the teacher when they consider it necessary. It seems that those who find submission unpalatable may find it especially so early in the term before it has taken on the character of an established institution. Later in this chapter, we will attempt to understand more fully which groups of students are responsible for these trends.

As we have indicated, students acting early in the term seem primarily preoccupied with presenting themselves in a favorable light and setting up a social climate in which their needs and abilities will be respected, concerns which often eclipse such goals as growing in knowledge and understanding. For the purposes of displaying one's intelligence, for instance, old insights are as useful as new ones, and almost any argument or objection will serve the purpose of communicating the message that one is not to be easily dominated. As a result of these developments, plus the fact that the students have yet to be well socialized into the teacher's preferred methods of handling content material, many early student contributions seem rather off the mark or uninspired. New teachers often extrapolate this kind of student behavior into the whole future of the course and despair accordingly. As we will see, this is premature; student concerns and viewpoints will change.

When we look at the teacher factors for the first few data points, we find that the tendencies toward Warmth and Apprehension whose presence we noted in the first data point have been joined by a persistent Role Dissatisfaction. This seems to have a number of causes depending on the teacher. The failures of students to manifest greater task-orientation in this phase is often one such factor. The Challenge and Contention which students display may also be particularly annoying. The teacher feels he is trying his hardest to be warm and competent, yet some of the students seem obsessed with attacking him at every turn. The result is a depressed, hostile reaction which begins to accompany and undermine his warmth. Another factor in this Role Dissatisfaction is the teacher's inability to find easily and immediately a professional role which is effective, stable, and ego-syntonic. Again, not blessed with the foresight our charts give us, the teacher may project his feelings into the future and look forward to a whole term of role discomfort.

The reader might wish to raise an objection here. If we are discussing the Role Dissatisfaction evident in data points one through six, say, how do we explain the statistics for Mr. C, who if anything appears to have been more satisfied than not during this period. We notice in listening to the relevant tapes that one of Mr. C's chief strategies in the first few sessions was to place a special emphasis on Warmth, a fact indicated, in part, by the duration of the Warmth with which he began the term. His style through this period stressed the roles of friendly ego-ideal and reactive facilitator. He encouraged the students to talk a good deal, being very receptive towards most of what they said. That this strategy worked well at first is shown by the failure of the students in this class to share in the Contention and Challenge of their peers in other classrooms. In contrast, the students exhibited a surprisingly strong burst of early Enactment. The events of this period developed a strong mutual trust and allowed self-presentations to take place in a fairly relaxed atmosphere.

We find here, however, as is often the case when issues which are ascendant in most classes are skirted or bypassed in one, that these issues rise to the surface at a later time, long after they have become dormant in other classes. In class C, for instance, Role Dissatisfaction finally made its appearance at data point 7 and stayed high for a good time thereafter. Apparently, despite all the mutual warmth, work was not proceeding maximally. Also we find that class C underwent a period of student Contention around data point 16 which is unique among the classes for that period. There is no doubt that much of the peculiar bitterness found during this period is a legacy of the restraint of Contention early in the term. "You presented yourself," the students seem to be saying, "as a fair guy, someone who was on our side, and we went along with you. Now that the test comes along, you prove to be as distant and arbitrary as the rest of them."

Besides the teacher's early tendencies towards Warmth, Apprehension, and Role Dissatisfaction, there tends to be movement towards greater Reaction as the term gains momentum. Apparently the necessity for gaining control and setting a direction takes some precedence over the teachers' need to get to know the students and to get them actively engaged in the classroom process, for Reaction seldom shows up at the first data point. A reactive style does tend to appear soon afterwards, however. In some classrooms, it is postponed for some time, perhaps because the teacher feels his control would be threatened or because he feels he has to give the students some background in the field before they will be able to contribute productively. To the extent that the first of these reasons is uppermost, a long period of Proaction may be self-defeating. In such a case, the teacher leaves himself scant opportunity to compare his anxious fantasies about student wishes to reality. In addition, when the teacher finally does inch his way into a reactive style, some students may be settled in a deep groove of passivity while others are more than ready to seize this opportunity for an overdue attempt at revolt. Still and all, all four of the teachers do switch into a more reactive style by the end of the initial phase.

As we mentioned earlier, we supplemented our observations of these phases by careful listening to individual sessions whose factor scores appeared to typify the trends we have mentioned. The sessions chosen for our early phase were the third session from Mr. A's class, the second from Mr. B's, and the fifth from Mr. D's class. Since the teachers' role performances as described by our teacher-as typology are not directly measured by the factors, we paid special attention to this aspect of his performance in scrutinizing these sessions. Hopefully, this will serve as a useful supplement to the information contained in the factor curves.

Mr. A began his session by asking whether the students had found it hard to get hold of the readings. This allowed him to appear friendly and helpful while also starting the class with an implicit emphasis on his formal authority role as an assignment-giver. In response to some student questions as to how the class would be graded, Mr. A appeared rather anxious and uncertain. After this, he began to lecture about the differences between "tough-minded" and "tender-minded" approaches to psychology. The lecture stressed his role of socializing agent, teaching the students the proper perspectives from which material is to be viewed, and also exhibited Mr. A's expert knowledge of the subject. In the course of the lecture, it became obvious that Mr. A was himself very conflicted about this schism within the field of psychology and he became involved in a proactive argument with himself about which viewpoint should prevail. This ambivalence made it hard for him to express much of the excitement or feelings of competence that one would associate with a successful ego-ideal performance.

Towards the end of the class, Mr. A opened up discussion on the topic of how he might have improved an experiment he performed during the previous class session. Students offered various suggestions, and Mr. A dealt with them purely from the perspective of the expert socializing agent, criticizing them on scientific grounds. Most of the students accepted this orientation, but those whose statements tended in other directions (e.g., having students use their own non-scientific perspectives to analyze the experiment or into an expression of student resentment about a course requirement that all students serve three hours as experimental subjects) also found that Mr. A was more interested in treating their responses from the point of view of the discussion he had already set up rather than facilitating the students in any further expression of their own concerns.

Mr. B's class, interestingly enough, also began with some questions about the availability of the readings and led into a lecture on the values of psychology and thence to an experiment which was used to demonstrate the points made in the lecture. But while Mr. A's expert-socializing agent performance had a monotonous stability, Mr. B, although stressing the same two role functions, continuously changed his role orientations, acting within many different combinations of the teacher-as categories. This flexibility seemed to reflect both Mr. B's active attempts to present himself as a multi-faceted person and his tendency to ignore or deny conflict by switching directions whenever it appeared. Another notable difference between Mr. A's session and Mr. B's is that Mr. B was able to muster a great deal of enthusiasm for his subject. Where there was a conflict of values in psychology, Mr. B emphasized that he saw both points of view as valuable and exciting.

The way Mr. B handled conflicts in the field of psychology seems typical of how he handled conflicts generally. He presented himself as very facilitative in urging the students to express their own opinions in a discussion on such matters as which human drives are primary, which secondary. However, when arguments arose, he appeared to be bothered by them, tending to cut them off by asserting either that both sides have good points or that there really was no conflict between them. As a result some students came to feel their statements were not taken very seriously.

Mr. D, on the other hand, began his class with a lecture on the topic of conditioning, stressing that the students must learn to master the jargon of psychology. Here, his performance as a formal authority was more closely bonded to his expert-socializing agent lecture than was the performance of the other two teachers, both of whom told the students not to worry too much if they failed to understand all the terms immediately. His style as he lectured included asking the students technical questions, forcing them to search for the correct answers. He also acted rather scornful if they failed to produce the proper response. As the class proceeded, student comments implied that many students would have liked Mr. D to stop stressing his formal authority, subside and become more facilitative of their own interests. He ignored these implied requests and the covert battle of wills resulted in a halting discussion in which the various parties seemed bored and continually failed to understand each others' statements well enough to give any coherence to the discussion. Mr. D exhibited increasing amounts of Role Dissatisfaction throughout the session.

We can see that the teachers in all three of these early sessions exhibit many common tendencies. Some examples are the strong emphases each put on socializing the students into the viewpoints and in one case the jargon of their field, their common struggles to integrate various aspects of their roles into comfortable classroom identities, their somewhat apprehensive avoidance of many of the emotional messages conveyed by the students, and their common lack of satisfaction with the progress made during the session. Both Mr. A and Mr. D were dissatisfied with their students' lack of enthusiasm for and understanding of the viewpoints they presented. In Mr. A's case, however, the lack of student enthusiasm flowed mainly from his own inability to present himself as involved or confident, whereas Mr. D's students became alienated by his scornfulness and overemphasis of the formal authority aspect of his role. Obviously, the concerns which need to be resolved if work were to proceed optimally would be quite different for the two classes.

By the end of the first eight or nine classes, a pattern had been set up, but its stability is deceptive. Teacher Apprehension is slackening as the worst disasters fail to materialize. Student Contention and Challenge also lessen in most classes as students see that the teacher is not a totally tyrannical monster. Moreover, patterns of Warmth, Support, and Exhibition have just about outlived their early usefulness. But probably the strongest spur toward active attempts at change is the teacher's persistent dissatisfaction with the way things are going.

Dissatisfaction and Discouragement

At about this point, we might mark the beginning of a new phase during which the teacher's Apprehension and his reliance on Warmth both gradually fade out of the picture, but he still remains placed well on the Role Dissatisfaction side of Factor II. The teacher has introduced himself, the class has begun running along in some kind of groove, but the teacher is bothered by such things as the students' persistent tendencies to show off or fight rather than work, their tardiness in learning to employ the viewpoints and information necessary for an understanding of the field, and his own feelings of ineffectiveness.

His state of depression over such factors spurs the teacher to attempts at figuring out the reasons for these failures and making whatever changes seem indicated. His conclusions about the nature of underlying problems may, of course, be more or less realistic, but they are certain to reflect many of his preconceptions about what is necessary for a good classroom relationship. If, like those in our sample, he is a relatively new teacher, this period can be particularly trying. Lacking much sense of the slow development of classes, he is likely to blame any problems in the classroom on his own lack of teaching experience and may be quick to see the ideas and strategies with which he began the course as inadequate and make conscious efforts to erase their effects.

Two role performances the teacher is especially likely to emphasize at this point are in the areas of ego ideal and formal authority. One of the beliefs which may affect his handling of the formal authority role is that the problems the class is having are caused by the students' lack of work. It may be increasingly apparent that students arrive at classroom sessions only minimally prepared to make any intellectual progress. To the extent that the teacher feels responsible for this state of affairs, he may identify his own early Warmth as the factor which has kept the students from taking his demands for work seriously enough. "I tried to be nice to them," one might paraphrase his thoughts, "and they just took it as a sign of weakness. Now I had better get tough."

Tough, in this context, mean punitive. The teacher tends to start placing increasing blame on the students whenever the class slows down. "How many people have actually done the reading?" may become a familiar refrain. In addition, the teacher tends to drop numerous references to coming tests as a threat to those who are presumed to be doing an insufficient amount of work. It is interesting to note that the two teachers in our sample who were slowest to swing around to a pattern of Reaction were also the first to take to Punitiveness. Just as these teachers feared that students, freed to participate, might wrest control away from them and overthrow their goals, they also seemed to find reasonable the idea that the class was proceeding poorly because of student laziness and indifference.

Another cause to which the teachers commonly attribute unsatisfying classroom interactions is their failure to get the students really involved in the subject. This belief will lead to different strategies for different teachers, depending on which aspect of the task of involving the students they think they may have slighted. One guess is that the students are not engaged because they haven't had a chance to participate, and this leads to increases in facilitating and reactive styles for some teachers. Another is that lack of student interest in the class reflects lack of enthusiasm for the teacher. This belief puts stress on the importance of the teacher's acting as an ego-ideal and may move him in the direction of trying to become a more exciting model for his students. His first attempts at this, however, are likely to be of the rather crude type which show up in the Display factor. The defensive stance of this performance ("You don't think much of me, but I'm really great") indicates that the teacher's rational plans to use himself as an ego-ideal have been affected by his unhappiness over feelings of having been rejected as a person. Indeed, a great deal of the Role Dissatisfaction present may derive as much from this issue as from discontent over the status of work in the classroom, and this may also be true of much of the hostility which finds an outlet in Punitiveness.

Another change in the teacher's behavior which might help make his energy sources more available to the students is a movement in the direction of greater independence and identification. And indeed we do find two of our teachers making the important switch into a colleagual stance during this period. In the case of Mr. D, there was a very conscious decision behind this change. We should note that such consciously premeditated changes are a hallmark of this period. True, some variations in style arise rather spontaneously out of the instability inherent in the teacher's impatience, but many others, such as Mr. B's decision to change the seating arrangement of his class, come into being after long periods of out-of-class soul-searching. Also, it should be pointed out that such an unspontaneous appearance of a colleague style as we find occurring in this period is unlikely to include any real willingness to share responsibility for the class with the students.

Another point to note is that in his zeal to improve the classroom situation, the teacher may find himself the victim of new contradictions. One place where this is evident is in his attempts to become at once a stricter formal authority and a more effective ego-ideal. The whole problem with threats and Punitiveness is that they alienate many students. And yet student alienation is the very thing teachers are trying to fight with their excursions into the ego-ideal role. The reparation mixed in with Punitiveness may help, but not sufficiently. Thus, the teacher's discomfort is increased by the feeling that the measures he does take to help matters often turn out to provide new hindrances.

Before turning to the behavior reflected in the factor scores for the student group for this period, we might do well to look more closely at the teacher's performance in one typical session. Mr. A, in session twelve of his class, exhibited the kind of tentative and indecisive attempts at reform that mark the most depressed periods of this phase. In the previous session, he had offered the students alternative choices in the matter of how they would like their third paper, an outline of a proposed experiment, to count toward the final grade. The students appeared most inclined towards the alternative of having the paper count if it would raise their grades but not if it would lower them. Mr. A had also suggested that those individuals who wrote good research proposals would be allowed to carry out this research in place of a final exam.

In offering students this choice, Mr. A shifted into a more colleagual and facilitative role in the hopes of spurring greater student engagement. On second thought, however, he began wondering whether this facilitation might not undercut his formal authority. Early in session twelve we find him mentioning these second thoughts and telling the students, "I think its feasible. After all, I suggested it—but consider this: what if somebody just sloughs off? There has to be some provision that this doesn't happen." And in another statement opposing facilitation to formal authority, he says "I don't know why it couldn't work out...If a proposal was good and if you're really interested in it, this could be a substitute for a final examination—subject to all red-tape kinds of clearances on my part of course."

When the students gave their opinions, they further acted out the conflict which Mr. A had been experiencing. Some attacked the proposal for the manner of grading and expressed their fear that it would allow some (other) students to "get away with" not working. Others supported the proposal and seemed confused by the fact that it was being reconsidered after being accepted during the previous session. A third group tried to find a compromise that would allow the proposal to stand with the added clause that everyone would be forced to meet some minimum standard, thus hoping to assuage some of Mr. A's fears of students sloughing off entirely.

During this discussion, Mr. A pointed out that he also experienced some conflict between his roles of facilitator and expert: "I like the idea of having a lot of responsibility placed on your shoulders. A lot of times I can't do this because there's some material I have to cover, for example." Nothing had been definitely decided by the end of the session, and Mr. A seemed to feel depressed and incompetent. The conflicts he expressed at length in the classroom had kept him from an effective ego-ideal performance, an outcome quite similar to that of the early session in his class described above. His final statements, which presented him more in the peer-facilitator role, went so far as to deny his desire to play ego-ideal. "There are a lot of unresolved issues in teaching," he said, "and all too often too few teachers make this clear to their students, and as a result what happens is that the teacher does not become a teacher at all, but becomes some sort of mystic figure standing up here holding forth on something which he and no one else knows about. There's no magic involved in teaching."

The other two sessions we chose as typifying this period are detailed elsewhere in the text, and we will say little about them save that all three classes portray the teachers as introducing innovations which were designed to reduce some of the affective arousal which was interfering with learning. For Mr. A, as we saw, this involved a change in the evaluation procedures and assignments. Mr. B, on the other hand, restructured the physical arrangement of the classroom and the pattern of discussion, while Mr. C attempted to confront and work through some of the disruptive affect aroused by the first exam. All three, moreover, encountered some degree of student resistance to the changes they attempted to actualize.

This brings us back to a consideration of what the factor curves reveal about the general picture of student response during this phase. The first thing we notice is that student Discouragement centers around this period, following closely the profiles of teacher Punitiveness. Depression reaches its high water mark for the students as well as teachers during this phase. Eventually, attempts to escape this depression and follow through on reparative guilt will elicit new efforts for some students, but for the present, the teacher's assignments of blame drain much of the students' confidence and energy. Many of them have been making a considerable effort to impress the teacher, yet he doesn't seem at all satisfied; their hope of ever gaining his favor may dwindle.

At the same time, the teacher's guilt inducing spurs students to ask themselves whether they have really been working as hard as they might. We remember that the issue of illegitimate desires to avoid work and the fear of having these desires revealed in class were among the chief causes behind the pattern of Concealment. A glance at Table 6-2 reveals that the openness of the initial classes has indeed been replaced in this phase by significantly higher scores on this factor.

At the same time that these trends are developing, the teacher's manifest dissatisfaction plays a part in prodding the students towards dropping many of their earlier behaviors. Support and Exhibition both slacken as it becomes obvious that neither is enough to win the teacher's favor and esteem. And Challenge and Contention may be undercut almost as much by the teacher's displeasure with them as by a lessening of some of the less rational fears behind them.

The other developmental trend which comes to the surface here and contributes to much of the flavor of this phase is the students' growing Anxious Dependence. The students have been unable to satisfy the teacher's demands as yet, the term is progressing, and the threat of exams and other evaluative procedures is in the air. Discouragement about the effectiveness of employing their own abilities causes some students to become more anxious than ever and to experience increasing feelings of dependency. Unfortunately, such dependent behavior is likely to make the teacher more dissatisfied than ever, a pattern contributing to one of the more vicious circles among classroom situations.

About the best thing that can be said about this period is that it cannot last forever. The discomfort shared by teacher and students provides a growing pressure for change, and although this often vents itself in rather shortsighted and irrational attempts at resolving problems, both the students and teacher are slowly gaining a more sophisticated view of some of the processes which are necessary for success within this specific classroom. The students gradually learn the types of involvement and application which constitute work in this situation, and the teacher gradually gives more of his attention to the emotional climate of the classroom and realizes the necessity for a number of changes in attitude even as he is learning to shape his expert pronouncements to the students' level of competence.

A more direct view of the kind of classroom interaction typical of this phase can be gained by listening to some dialogue from this period which illustrates some of the depression and fumbling activity on both sides. Mr. C begin the session.

Mr. C: "I have a ditto here—not a problem, its a help. You have had it in terms of reading lists, I take it. It should be picking up by now. I understand that most of you have been busy with [Fraternity] rush and other....um, tensions.

Class: (Roar of laughter.)

Mr. C: You should be raring to go now. This is a statistics ditto. My usual statement of don't panic goes tenfold here. This is just intended as an aid.

He leads them through the first couple of pages of the ditto.

Mr. C: Page three is probably the most important one for you. I do want you to be able to understand correlations and the basic idea of cause in correlations. For those who want to go a little further...

Class: Anxious laughter.

Mr. C: Page 5 gives some very good ideas on how to proceed...Well, last time we were really flying through a very important area, prenatal and paranatal influences. Let me stop here for a moment. Are there any questions? Are you clear on this behavior? How many of you have had a chance to start on the third reading list?

Class: (Five or six raise hands.)

Mr. C: How many have not?

Andrew: You mean start the third reading list already?

Mr. C: Yes. How many haven't begun it at all yet?

Class: (Ten or twelve raise hands.)

Mr. C: OK, careful, because its a lot, it really is a lot. So see if you can get going on it. Try not to leave it all for the end.

Carol: Will this be on the first exam?

Mr. C: (Wearily) The first exam will cover all the material up to the end of the fourth reading list. The end of maternal deprivation.

Marsha: (Anxiously) Brenner too?

Mr. C: You don't like it? Clear or unclear? Well, in all honesty, I can't hold you responsible for Brenner if I haven't covered it in any systematic way in class.

Roger: What's going on tomorrow?

Mr. C: Tomorrow? Hill Auditorium. How have those lectures been, by the way? I haven't had a chance to pick up any feedback on it from you.

Allen: I hear they're five times better than last term. But then again...

Mr. C: Five times zero is zero, huh? Well, five times point one is point five. Let's give it a try a while longer, huh? Why don't we all sit in the same area?

They discuss for a while where their class will sit in the mass lecture in Hill Auditorium. This reminds the teacher of an incident.

Mr. C: ...Crossing the aisle. We'll cross the aisle, like Churchill, you know. Oh, you don't...well in Canada, unlike here, a politician can switch parties more easily. And Churchill, when he switched from the Liberal to the Conservative party, was called a rat. But finally Churchill got fed up with the Liberals and switched back again, at which time he said something like "It takes some courage to be a rat but imagine how much courage it takes to be a re-rat."

Class: (Silence)

Mr. C: OK, so we'll sit on the right side, about halfway up.

Herman: I think that there are actually four sections, not three.

Mr. C: I'll put up a flag, OK? Any questions now about prenatal or paranatal. Or are we kicking a dead horse? Shall we move on? (Laughs.) I don't know, cause I got no feedback in terms of this stuff is great, its boring, pursue it further, review, I understand, I don't understand—I don't know. Move on? Everybody?

Jim: I have one. On this test we're going to take, what kinds of questions are they going to ask?

Mr. C: Oh, crazy, crazy questions.

Jim: But what? What could they ask us on this birth and about this child influence and everything like that?

Mr. C endeavors to answer this and more questions following on specific problems about the topic and questions about the test. He becomes rather depressed that the same things need to be explained over and over, and one can see that he would like to get on to the next topic. We jump about twenty minutes of class time and come to these interactions:

Roger: Yeah, maybe you're right. I'm just not sure.

Mr. C: Well, you're not alone. Not by any means. It's a very complex problem, a result of all kinds of wild interactions, and I'm only giving you a few things to hang your hat on. Yes, Floyd.

Floyd: As far as environment goes in the home, what's more important for IQ, an educated father or an educated mother? Do you think you could say?

Mr. C: You know, you're really raising the question of what's a good mother, and that leads us to maternal deprivation. (Laugh.) What happens when you don't have a mother. Great! Good transition. I take it we can leave prenatal and paranatal effects. Thank you Floyd (laugh)...I was just sitting here waiting for someone to toss me the ball. OK, the kid comes out; he comes out with various predispositions, sometimes with deformities. He comes out into this bloody, bleeding confusion...

Mr. C continues, lecturing on maternal deprivation from this point on.

Early Enactment

This period of mutual distress is brought to its twilight by the sudden student reversal from Anxious Dependence to Enactment. This striking change occurs in all four classes somewhere around data point 15. The question facing us is where, in all that floundering around, can we find the stimuli for such an upturn. One possibility is that the teachers finally hit upon a combination of strategies and styles which opens the door to student independence and identifying. As we have noted, the teacher is likely to have by this time gained more complicated conceptions of what activities on his part are best calculated to foster independent involvement by the students. The teacher may also have learned from his previous failures that he must go beyond token changes in style and attitude if he expected the students to change significantly as well. Whether by taking premeditated steps in hope of change or by simply "feeling his way," the teacher becomes increasingly likely to find his actions bringing more successful results.

An example of such a successful change in style occurs in Mr. D's classroom. Mr. D started the term with a powerful, rather forbidding stance which funneled many students' energy into Contention and Challenge while effectively blocking their path to identifying with him. After becoming increasingly dissatisfied with the progress of his class, Mr. D for the first time came to the perception that a less scornful and superior style might have better effects. The result was that he went into a series of sessions determined to be warmer and more colleagual. His altered behavior gave many students their first view of him as a possible model. Happily enough, they seized this chance and our charts for this period show both Challenge and Contention falling away as Enactment and Consent made sudden spurts.

Changes in the teacher's style are not the only factor which can unblock pathways to Enactment at this point. In two of the classes, for instance, hour exams were held at about this time, and the fact that most students got through them without major tragedy no doubt restored much of the confidence that was so rare in the sessions just prior to the exam. We might add to this the fact that extra studying done for exam preparation or simply in hopes of avoiding the teacher's Punitiveness gave some students the breadth of information and background they needed for an enacting performance.

The truly important point, however, is not the removal of the various blocks to Enactment, but rather the readiness with which students turn to this mode of action as soon as they find a way to do so. For one thing, they are more than willing to step out from behind the image of dependent, lazy dullards. Besides, after they have been engaged in the task for a while, the paralyzing doubts which brought on Discouragement begin to seem a little absurd. Since other strategies for assuring feelings of competence within the classroom have yielded sparse results, students may feel they have little to lose by putting aside their doubts and attempting to work in concert with the teacher's style. A few students try it, it seems mildly successful, and others follow.

This is not to say that this period of Enactment provides us with a picture of the optimal state a classroom might attain. For one thing, it is probable that the chief motivation behind it is a desire to overcome the images of laziness and dependence, and the Enactment of this period cannot thrive for long with only these roots. It does make use of the students' independent engagement with the subject and their desire to gain knowledge for their own purposes, but these are likely to place low on the list of current motivations. For another thing, the students have still not been very thoroughly initiated into the skills and orientations necessary for really fruitful contributions.

The teacher's Dissatisfaction starts to trail off during this time, but, for the reasons given above, it does not disappear completely. The teacher is bound to be happier with this performance than with previous ones, but it still is a long way from being what he would consider a truly successful class. A feeling for the necessity to protect and nurture the students' first real attempts at independence tempts most teachers to employ a reactive, facilitative style during this period. Unfortunately, giving the class over to student initiative at this point also has the effect of slowing it down. The process rather resembles that of a child trying, for the first time, to tie his own shoe when it comes loose on a walk. His mother will be glad to see him make this advance toward self-reliance, but, after watching him fumble with the laces for a while, she may decide to do it for him in the interests of getting on with the trip.

One factor that does begin to drop out of the teacher's repertoire at this time is the previous high loading on Display. This pattern was a popular one while the students' response to the teacher seemed cold, but now that students have begun making a gratifying identification with him, he no longer finds himself tempted to rely on it. We also find in this period that Apprehension has plummeted to a new low in the face of a new degree of responsiveness from the class.

One pattern the teachers do tend to retain here is their Punitiveness. As always, reasons for this will differ among the teachers. One is that they suspect, perhaps correctly, that it has played some part in the students' attempts to improve their work. Another point is that Punitiveness has not proved to have the feared effect of totally alienating the students. So even as we find the teacher warmly encouraging the students' tentative steps, he is also making certain that they remain aware of the blame that would befall them were they to stop making this effort.

On the students' side, Enactment is accompanied by persistent Discouragement. Even as they make their strongest attempt to carry the ball, the students remain somewhat depressed and apologetic about their ability to do so. The somewhat dull, naive quality of many of their contributions strengthens this feeling, as does the teacher's continuation in Dissatisfaction and Punitiveness. We also notice that the beginning of this Enactment phase marks the final downfall of Exhibition as a student strategy. If lack of any reinforcement has not already killed it, the teacher's much greater response to Enactment decreases further the chances that the students will use Exhibition as a way to win the teacher's approval.

Because of some of the problems inherent in allowing student Enactment free play at this time, this period turns out to be a short one. Nevertheless, it represents an important advance over previous patterns of interaction. While the teacher's dissatisfaction may not have lifted completely, his despair about ever getting the class off the ground has been overcome. And while the students do not exactly have cause for triumph at this point, they have certainly improved their position a good deal. Moreover, they have had a chance to discover the possibility of Enactment as a way out of the uncomfortable stasis of Anxious Dependence and to gain some useful practice in employing it.

The Teacher Takes Control

The early Enactment period continues for a few sessions, the teacher maintaining his facilitating, primarily reactive style. After a certain duration, however, the teachers make a more or less conscious decision to step in and take a greater measure of control. The students' ability to work independently has been proven and teachers feel it can once more be called into play at the appropriate future time. For now, a more active, intrusive style seems to be indicated.

If the teacher is wise, he will avoid doing anything to belittle the students' achievements. He is in the position of the coach who says "good try. Let me show you one more time, though." Any hint of "well, you had the chance to run the class and messed it up—now it's my turn" is bound to drive Enactment underground for a long period. An example of a fairly tactful transition occurred in Mr. B's class. Everyone had recently returned from a short holiday which broke the continuity of a previous phase marked by student-led discussions. Mr. B had finished handing back a quiz and handling the inevitable arguments about the fairness of the grading.

Mr. B: I would like your permission to close discussion on the quiz, and I would like to lecture uninterruptedly, that is, as a departure, for about ten minues on childhood perception, and if you have any questions, I want you to restrain yourselves, and make notes, or...or...Yeah, Jack.

Jack: I have just one request. If you go too fast, can we tell you?

Class: (Laughter.)

Mr. B: (warmly) Yes, you may raise your hand if I'm going too fast, ok? The reason I'm kind of insisting on this pattern without asking you how you feel about it is that there is information which is critical for our takeoff for discussion. I want to go back to the passage I read from Look Homeward Angel.

Mr. B asked for ten minutes, but actually this interaction marked the beginning of a great decrease in the persistently reactive style he had employed throughout the previous period. Although a few student-led discussions were scattered through the next few sessions, Mr. B became increasingly determined to change his style. A few sessions later, we see him continuing his push towards Proaction.

In the previous session, Maury had presented some material on unconscious motivation as grounds for a discussion. Before it was completed, however, his presentation had been interrupted by two or three students who had spent the remainder of the session arguing that there is no such thing as unconscious motivation. Mr. B began the next session by telling the students that in considering that discussion, he "was thinking that there was some material that I didn't give you that might make the idea of unconscious motivation easier to accept." After saying this, he lectured for some time about various indications of the reality of such motivations.

At the end of that lecture, he informed the students about more of his thoughts on the progress of the class. "I think the problem with the discussion Friday was this," he told them. "Maury was working very hard to proceed from a basic assumption of motivation and not to question this. And I think when we talked about Freud and Erikson, this is the way we have to operate at first. We've got to understand what the person is saying, understand their theory. Start with the assumptions and don't question them to begin with. I think you can only effectively criticize and discuss a theory after you've understood how it works. So what I view now, in retrospect, as a subversion of the discussion by those who were—wanted to say 'Well, how'd we know there's unconscious motivation'—that's not a bad question, but what Freud was trying to do—which was to work with the concepts that were already given to us; I think this was subverting the purpose of that particular discussion...So I think the points that George was trying to make were very good points and things to come back to, um, at a later time. Therefore I'm not saying that these other directions we were taking were irrelevant. I'm saying temporarily they diverted working with the theory. I'm not trying to say this as something that's—it's not an evaluative judgment...I'm summarizing what I thought I heard people saying towards the end—we were kind of, that is, going around in circles. I don't think the discussion was bad and I think it highlighted an important problem that is that only after we've worked with it can we go back and say, Well, OK, we know how unconscious motivation works—so what?" After this Mr. B began a lecture on Freud's structural hypothesis, but interrupted it to say, "I'm really changing the format for a while to do a lot of talking, to lay down certain concepts."

Of course, not every teacher will combine the feelings and strategies indicated by Mr. B's actions. And indeed, we find generally during this period and the ones following that the number of correspondences in behavior between the four classes become fewer and fewer as the cumulative effect of the group's prior history shapes a unique listing for each classroom. As in chess, it is the middle game which reveals the distinctive character of the interchange. Nonetheless, all four teachers evince an impatience with student progress along dimensions of expertise and socialization, and all make moves towards less facilitation and more lecturing.

In general then the end of the early Enactment period signals a switch to a whole new pattern for the teachers: they become formal, proactive, and, for the first time move over to the Role Satisfaction side of Factor II. The category that best characterizes the period is teacher Showing Dominance, and perhaps the key factor is Formality. The teacher here shuns a sharing, independent style and opts for control and responsibility. With Formality and Proaction both present, the teacher's activity most often leads to a lecture format. Student questions are encouraged, but more as a spur to more lecturing than as a facilitative device. The teachers seem to feel confident that they have something truly valuable to impart.

On looking back, it is obvious that the preceding period of student Enactment has provided the necessary springboard for this behavior. For one thing, the teacher no longer has the uncomfortable feeling that he is lecturing at a group composed solely of unresponsive dullards who like his subject little and himself less. The students have shown themselves capable of involvement and intelligence. They may be a bit unskilled in dealing with field, but one would expect this even of the most capable and willing apprentices.

In addition to these advances, the teacher now seems capable of maximizing the potentialities of a number of his roles. As we will see in a moment, student Contentiousness has greatly decreased, leaving the teacher free to use his own judgment in the formal authority area. Moreover, the experience gained as the term has progressed has given him more competence in this area and in his additional roles of expert and socializing agent. The need for his aid in this latter sphere has been well illustrated in the student floundering during early Enactment.

The strongest addition to his repertoire, however, is his new ability to make use of the ego-ideal function. At earlier periods, fulfillment in this role was blocked by the students' lukewarm reaction and the teacher's resulting uncertainty. Now, for the first time, the teacher senses that the students share his goals. For this reason, his new excursions into the ego-ideal realm have little of the ambivalence and defensiveness characteristic of his earlier bursts of Display. Rather, he appears at home with the function of offering the students a vicarious experience of his own excitement and involvement in the field. It is little wonder that all these advances snowball into a long-postponed breakthrough into Role Satisfaction. This satisfaction appears at about this time in all four classrooms and is remarkably persistent from this point on.

Turning to the student side of the chart, we might expect to find a decrease in Enactment, which, indeed we do. Three of the four classes even dip back into Anxious Dependence, as if to complement the teachers' overriding dominance. This turnabout on Factor I is not of great duration in any of the classes, however. Despite the teacher's sally into dominance the class has pretty much lost the cold, fearful aspect it once presented to some students. Anxiety becomes as outmoded for the students as it is for the teacher.

The other notable change in the students' behavior is their new high loadings on Consent. If the Showing Independence of the Enactment period has dropped out, the Identifying has not. This Consent provides a great part of the base for the teacher's confident performance all through this period. The students have had to take up a more passive attitude, but they seem reasonably content with this arrangement for the present.

Although the teacher's Dissatisfaction drops as this period begins, the students' Discouragement remains high for a while longer in some classes. The teacher is redeeming his confidence through strong action, but the students are unable to take that path as yet. Also, students may feel a little depressed over the fact that the teacher felt the need to take over and steer them out of the doldrums. Even though they identify with him, they cannot help but feel a bit upstaged by the potency of his performance.

An example of the kind of relaxed, effective performance we find some of the teachers giving as they hit their stride during this stage is session 25 of Mr. C's class. At the beginning of the session, a problem arose in that Mr. C had forgotten to bring some mimeographed material to class, but he quickly suggested a solution in a casual, friendly manner. Then he began to lecture on the work of Piaget, in a very energetic, enthusiastic manner: "Piaget is to psychology now what Freud was fifty years ago. That kind of depth, thinking— a real trail-blazer. And it's very clear that movement in the field now is very much along his lines." As his lecture continued, students occasionally questioned him. Their questions were notably useful in clarifying the lecture and tying it to other material that had been covered in the course, and Mr. C often began his replies with compliments on the intelligence of the question.

To illustrate the idea that a child lacks the ability for empathy, Mr. C gave the following examples: "What do I do in the classroom? I see what I get across by watching. I take a person and I throw myself into that person. I become you and I listen to myself lecture in class and I try to understand what Mr. C is saying. Or, like when it comes to exams you put yourself in my position and try to psych out what I'm going to ask. You see a child can't do this..." In this one example, Mr. C managed to blend effective performances in almost all of his roles. The general tenor of the lecture, of course, is an expert one, with overtones of socializing students into new viewpoints and methodologies for studying the field. In his onrushing enthusiasm and in his taking an example from the immediate classroom situation upon which to demonstrate the theory, he demonstrates the excitement and relevance the subject holds for him, thus providing himself as an ego-ideal for the students. The fact that he can use the matter of examinations as an example demonstrates that he feels little of his previous ambivalence about presenting himself a formal authority. Finally, his personal revelation about how he lectures catapults him out of a frozenly formal role and makes him into more of a peer for the students.

One dividend of this period is that mutual trust between the teacher and the students tend to spiral upward all through it. Both parties are much better acquainted with each other than in earlier stages, and there is an awareness that each now holds a degree of respect for the other. Of course, this is more true of some classes than others. In some classes, for example, this trust may have been seriously impaired by the teacher's implied belittling of the value of student contributions during his switch to proactive Formality at the conclusion of the Enactment period.

As we have mentioned, divergences among classes are on the increase during the later periods of the term. We could see in our examples of early sessions that the personal attributes of the various participants in the classroom helped precipitate differing types of conflicts in the different classes. Some of these conflicts are resolved or at least lose much of their intensity as time goes on whereas others intensify or lead to new crises. At any rate, there is a whole range of relational issues which may or may not have found some resolution by data point 25 or so. Has Mr. A managed to overcome his feelings of depression and incompetence, for example, or has Mr. D's hostility been integrated into the classroom in a way that doesn't disrupt all student attempts at work? Or, to cite some more commonly encountered issues, has the teacher realized the potential of the energetic and rebellious cluster five people to contribute to the class or does he see them only as unwelcome competitors? Are the teacher's moves to quiet the exhibitionistic cluster seven people when they threaten to run away with the conversation deft and easily accepted, or do they arouse fears of speaking freely in all the students? Has there, for another example, been enough interplay among the individual students to make them feel part of an integrated class or do they still feel they are in a group of strangers?

The questions we might ask are numerous and the answers as diverse as the number of classes we choose to study. Where few of these issues have been satisfactorily resolved, the class will have little chance of transcending the formal lecture format and may even regress now and then to styles more suited to continued work on problems which were not resolved earlier. In some classes, however, many of these issues have been successfully resolved and this success has removed many of the original blocks to classroom work and contributed to feelings of competent strength on the part of both students and teachers. In cases such as this, we may find scattered late sessions where increasingly satisfactory classroom relationships occur.

Late Enactment

As the teacher continues through the lecture period, his trust in the class increases steadily. The students are less withdrawn and retentive, they seem to be working harder, and their questions grow in intelligence and maturity. The students for their part, provided a number of the issues we touched upon above have been solved satisfactorily, are better prepared than ever to assume more responsibility in the class. If the teacher thinks such student self-reliance is worth slowing his breakneck pace a little, he may be willing to relax his control.

His first tendency, in such a case, will be to downplay Formality and begin to act more in keeping with a Colleague pattern. The teacher may continue doing the greatest proportion of the talking but he begins to treat the students more as friends and equals, to tell stories from his personal history, and to adopt a casual style. Dialogue chosen from various portions of one of Mr. C's classes from this period gives evidence of his shift into a Colleague lecture. We also note the complexity of student questions and the teacher's ability as an ego-ideal to give the class the benefit of his own experience and make theory relevant to every day life. The session has begun with a decision on when to hold the next quiz.

Mr. C: I don't feel any better about exams than you do. I just came back from getting one back today myself. I'm mad at the instructor and everything—I'm going to kill him (laugh); I've got an appointment tomorrow. I'm going to yell and scream at him...

Students: Laughter.

Mr. C: He doesn't know what he's in for. Everything you do to me, I'm going to do to him...Well, onward. Today, I want to tie up a considerable amount of psychosexual theory.

Mr. C lectures for some time, answering occasional questions.

Mr. C: ...Later in his career, he suggested that aggressive impulses become fused with the libidinal, or sexual ones, and play an important role in the anal stage.

Dorothy: Did he say anything about biological determination of these changes?

Mr. C: OK, now this is going to represent a problem.

Dorothy: Well, what did he say determines going from stage to stage?

Mr. C: It is, in a sense, the distribution of, or the locus of, sexual energy. Where it is located; where it derives, its primary sense of gratification from...

He lectures further, explaining the concept of sublimation.

Mr. C: So that's what finger painting is all about. I used to use a lot of...I had one kid I worked with, a seven-year-old kid, who used to like flour and water. We'd take this big batch of flour and water, mix it up together. Then, what the kid wanted to do—and I had no idea why he did this—he would take one of those powdered brown paints, mix powdered brown paint into this flour and water. Now obviously, the anal implications of this were quite clear; this was a seven-year-old kid. Why brown paint? Why not red, white, and blue? He was just impossible if we ever ran out of brown paint. No other kind would do.

He continues to discuss anal character types.

Mr. C: ...So he said that the three traits of an anal personality are, let's see, what are they? Parsimony, that's one. Parsimony, orderliness...Yes, Herman.

Herman: But that seems to me to be just the opposite of the anal thing. I mean...

Mr. C: So you say all of these qualities are the opposite of smearing, and, and...

Herman: No, no, not all of them. But some. Like orderliness.

Mr. C: Well, now, it's clear that there are really two distinct kinds of anal pleasure...

He explains and lectures further, covering the concept of fixation.

Mr. C: So what kind of wife would a guy like this look for. Gee, I see that I'm integrating a cool unit on mate selection. It's not really like that, believe me. But for pedagogical purposes... So he might, instead of looking for a girl who will help him move up the ladder, he might look for a girl who can do only one thing—take care of the kids. But, look, to get back to this oral dependent guy. What about the kid who grows up with a mother who's always indulging him? Indulging his every little need. And some mothers are very seductive toward their children. Remember I told you about Paul? Now clearly his mother had a nice sexy relationship with him. Look, I have a relative, who is a big brute of a guy, he's about six foot, very effeminate, and he has various problems going along with that, and she just indulges his every dependent bid. Just think of this sixteen-year-old kid crying because he can't handle the world, and his mother cuddles him, and he puts his head on her breast, and there's all this dependent, sexual...you know.

The lecture continues, returning to anal fixation.

Mr. C: So you hear them saying, especially about the middle class, that someone collects money as a derivative of the pleasure of holding feces.

Floyd: Hasn't there been some kind of a study done to find out whether more successful people have this kind of toilet training, or...?

Mr. C: Well, you will find, you see; the point is, that being somewhat fixated at the oral or anal level is not necessarily so terrible, because a little bit of being anal is...OK, like most researchers who are very systematic and orderly, or accountants, for example, have to be a little bit compulsive. Otherwise, they couldn't function well in their job. So it's quite functional. It's not so bad.

Floyd: How do you handle something like toilet training?

Mr. C: Well, how do you handle any of these issues? You've just got to be a reasonable person. You're asking me for a magic formula. I just don't know. I think flexibility is the key issue, the ability to sympathize with and know your child.

Floyd: Then I guess the main thing would be to avoid extremes.

Mr. C: Yeah, I'd say so.

As the teacher moves toward a Colleague pattern, he also finds that the time is ripe for dropping his Punitive thrusts. The students are working creditably, and threats and blaming have become an unnecessary hindrance. At about the same time, partly as a result of this switch, partly due to their own growing self-confidence, the students' Discouragement trails off, never to return. The students have some record of achievement behind them acting as a buffer against the loss of this confidence. Since Role Saitsfaction for the teacher also remains high, the issue of depression in the classroom has been pretty much transcended as was the issue of anxiety before it. The drop in these emotions brings a concomitant drop in hesitation. The remaining classes are less tentative, more straightforward, and they accomplish much more than most earlier classes.

The other fact to note is the return of Enactment in some classes. Growing familiarity with the teacher's style and subject have given the students more potentiality for effectiveness in imitative work, and the teacher's switch into a Colleague stance makes possible its actualization. This late Enactment is evident in profusion only in some classes, of course, and even classes which do reach this stage do so only in their best moments. Nonetheless, many classes have their most successful periods during this part of the term.

The Enactment we do find here takes place in a slightly different setting from that appearing in the early Enactment phase. At that time, we found a very reactive teacher responding primarily as a facilitator to the statements the students put forth, using accepting and resisting to shape their output toward greater socialization. These styles both reflected a situation where the teacher felt he knew far more than the students and was acting as a guide for them. The teacher also acted rather cautiously at that time, afraid that any thoughtless move could severely harm the young sprouts of student initiative.

Now the situation more greatly resembles an exploration team whose leader just happens to know the terrain a little better. The chief aim is discovery, and anyone who can make a contribution is welcome. The students make use of their ideas and resources; so does the teacher. To this end, he makes his contributions without giving up his proactive style, and these are paralleled by the students' Enactment. This picture is, of course, correct only for the best moments of this phase, but no other period comes nearly as close to this ideal as this one does.

Separation

Whether the classroom in its large stages has neared this ideal or not, whatever issues have predominated in this phase are eventually overshadowed by a new concern, the approaching end of the course. An interesting two-pronged phenomenon occurs here. On the one hand, the dramatis personae begin to withdraw from the here and now and take a longer view. The course is not eternal and all-important, they realize. On the other hand, the last few sessions usually include an involving drive toward covering all material possible and resolving all outstanding affective concerns before the end of classes and the final exam.

The last few sessions are notable for the number of terminal reverses in factor patterns. This is caused in part by a decrease in the inertia of whatever patterns have emerged as the group's end approaches. In some cases, there is a drop in the energy and continuity needed to sustain high work phases; in others, there are radical attempts to correct long-term imbalances while there is still a chance. Sometimes there are regressions to earlier stages in the class' development. At the same time, we find a number of new phenomena specific to this period.

There are great differences among classes here in the way in which characteristic themes are handled. One example is the way various teachers manage factors I and III. Mr. B drops his Colleagueal stance around data point 31, lectures uninterruptedly for about five sessions, then chooses a reactive, Colleague note on which to end the class. Mr. C, on the other hand, retains his role of Colleague almost until the end, then enters in a surge of proactive Formality in the last two sessions as he drives to prepare the class for the final. Both men feel needs both to retain a Colleague style and to cover a great deal of material. The only similarity in how they achieve this inheres in the frequency of changes close to the end.

Three late trends bear remarking. One is the sudden drop in Role Satisfaction which we find in two classes. It seems that some teachers, toward the end, shift their frame of reference from the real possibilities within the classroom back to the ideals with which they began the term. The late phases have been gratifying when compared to the early ones, but the class has been far from an unqualified success. Now it is ending, leaving many hopes unfulfilled. The enthusiasm which accompanied the involvement of the late phase is dying, leaving depression or even a sense of relief in its wake.

We find a more common terminal trend portrayed in the rise in student Unresponsiveness. Both students and teachers have had an increasing share of their thought and energy tied up in the classroom process. Now they must find some way to reclaim it for other uses. The class' death is not sudden; the participants have typically withdrawn much of their commitment long before the last bell rings. Unresponsiveness, the student version of Withdrawing, surfaces four of five sessions before the end. The teacher, in keeping with his professional commitment to keep things going and his greater emotional investment in the course, hangs on longer, but his Withdrawing also shows through in a reappearance of high scores on Apprehension right at the end.

Even as this process occurs, we notice activity of a different kind in two other factor patterns, Warmth and Display. These are linked, in the two classes where they are most evident, to a falling off in Contention. What is happening here is that teacher and students are reviewing the class' progress and congratulating themselves on a job well done. The work phase is over, the distancing aspects of some previously necessary roles can be relaxed, and there is a celebration replete with warmth, relaxation, and triumph. Interestingly enough, this pattern is most evident in the two classes which had the most sustained periods of the Colleague-Enactment combination, classes in which the students and teachers had managed to create a real and satisfying collaboration.

Three sessions we chose from close to the end of the term confirm these analyses. Mr. B, in his next to last session, appears relaxed and casual. He retreats from his non-stop lecturing of the preceding few sessions to the more reactive style he had favored during the late Enactment period. The students respond with an intelligent discussion concerning possibilities for ego development in utopian societies. The session has a warm, friendly tenor and the students appear proud to be working with such great understanding of the values and jargon of the field.

Mr. A tries in his last two sessions to transcend, finally, his conflict between his roles as formal authority and facilitator. He accomplishes this by turning the leadership of the discussion over to a student and withdrawing for long periods of time, a radical departure for his class. The student discussion turns out to be enthusiastic, if a bit tentative, and much of it appears to reflect affective concerns springing from the classroom relationship. It is hard to tell to what extent the content of the discussion does relate to the classroom situation itself, but we might remark that many of the content concerns appear to parallel events in the classroom. For example, the students argue about whether Frazier, creator of the Utopian Society described in B. F. Skinner's Walden II, is really a part of the community he created. Meanwhile, Mr. A sits silently at the edge of the circle and many seem to be wondering whether he is still the formal authority, or simply another member like themselves.

As the session progresses, Mr. A is inevitably drawn to speak out on one issue. When his statement is followed by silence, he seems at a loss, then says, "Now someone disagree." The students appear to feel they are in the bind they have been in throughout the term, namely that they are asked to disagree with the teacher but are likely to be squelched by his defensive display of superior knowledge if they do so. Mr. A does seem a bit more sincere about wishing to abandon some of his authority to play a more facilitative role here, however, and students finally respond to his request for disagreement. Like Mr. B, Mr. A seems much more relaxed than usual in this session. Many of the conflicts which have persisted all term still haunt Mr. A's last two sessions, but, faced with the prospects that the term is ending and he has little left to lose, he is much more willing to experiment in hopes of overcoming them.

Chapter V-8

Conclusions and Recommendations: The Process of Learning to Work

A reasonable estimate of the number of undergraduates who at some future date will walk into a class on the first day and discover that their teacher is one of the eight authors of this book would be between fifty and one hundred thousand. We mention this because the time has come to view our study of classroom interaction not simply as a journey into the complexities of human groups; we want to know what all this implies for effective college teaching. Part of our hope, to be sure, is that some of our readers will sense the meaning of what they or their students are doing in class; part of our hope is that other teachers will be inclined to try out other ways of planning for or responding to their class, given some altered sense of the needs, feelings, and strategies of their students. But it is terribly difficult to give advice or to be critical when the audience is not at hand. One audience for our efforts to draw implications from this work which is very much at hand, however, is ourselves. We are teachers as well as researchers, and we could feel much more comfortable reminding ourselves of what we think we have learned in the course of this study which may be useful to us in our next classes than to begin a list of "do's" and "don'ts" for an unseen audience. We invite others to come along; we hope what we conclude for our own benefit will be useful to others, but it turns out to be complicated enough simply to rearrange our data in a form suitable for our own consumption.

A recurrent question in our discussion has been of the order, "Well, what is a good class period like?" or "What are the high moments in a term?" It may well be that we have spent so much time attending to the unhappiness, anger, or shallowness of the students in this study, and in our own classes as well, that we need first of all be reminded that "teaching can be beautiful." As we sift over the data and our own memories, at least three different answers seem to present themselves. We are reminded first of all of the class period where, regardless of whether the format be lecture or discussion, the level of task energy is extraordinarily high. The discussion stays on the topic, the students seem especially attentive to the intellectual issues being raised, and one is struck by the low level of distress, quarrelsomeness, or withdrawal. The class seems like a finely-tuned motor operating at maximum efficiency.

The first example of the high moments is soon joined in our minds by a slight variation. The second example includes seemingly extraneous material, brief outbursts of irritation or uncertainty, but one is struck here by the ease with which the teacher or even other students can find the effective thing to say, effective in the sense that one can almost watch the misunderstanding dissolve or the anger and distress become transformed by means of gentle humor or reassurance or some form of valid and satisfying responses to the emotions involved. In a slightly different sense this too is an efficient social institution, one in which there is a flexibility about the focus which enables the teacher and students to spend time reducing potentially disruptive conflicts and distress without losing task involvement and capacity.

We will come back to these two variations on the high moments in classroom discussion, but only after introducing a third variant. This candidate for best session of the term is really quite different. This third kind of interaction, far from suggesting an efficient and flexible task group, might more usually be called the "turning point" or the crisis. To qualify, at least in our view of things, these sessions need to be characterized by more than a vast eruption of emotion, although this may well be the case. Perhaps the contrast in marriages or other intimate dyads between prolonged but unproductive sniping and a genuine fight captures some of the distinction, but the session in question need not be hostile in character. Instead, what seems to cut across these sessions is an intensity of emotional engagement that signals a widespread belief that this digression into non-task activities is purposeful, legitimate, and necessary. Over and over again, as we sift through the important sessions in these and other classes, we come up with periods of quite minimal task activity which seem nonetheless to be directly related to subsequent gains in both task productivity and interpersonal harmony.

If we cast our view over the three sorts of high moments, what do we find which links them together? In all of them there is a quality of engagement, a serious involvement in what is going on. One's whole sense of time seems altered in a good discussion, of whatever variety. That paradoxic sense of time standing still but in end seeming to have rushed by is part of these moments; one is free to explore within the present because the future seems so ample, and it appears that no exploration can go so far off course that one will be unable to make appropriate adjustments later on. And yet one is hardly standing still; there is a sense of almost effortless progress and growth.

Looking further into this set of high moments, it appears that behind the intensity and the vivid timelessness there is in each case a degree of correspondence with the underlying interpersonal realities of the group. The unsteady mixture of task pressures and affective, interpersonal pressures creates a shifting reality for teachers and students alike. The high moment, whether it involves pure task involvement, rage over the teacher's grading policies, or some precise and effective mixture of the two domains, is invariably a moment of high energy liberation. If teacher and students alike are deeply involved in pursuing the intellectual material, then the path of maximum energy will be in the direction of the task, but if the preoccupations of the teacher or the students, or both, run in the direction of unresolved power or intimacy issues, the moment of high energy will be the moment when it suddenly seems legitimate and promising to thrash out issues far removed from the content of the course.

As we mentioned at the outset, we have found it useful to think about the simultaneous pursuit of both task and affective goals under one rubric, the pursuit of the goals state we call "work." Our efforts to cull out the high moments of the four classes under study yielded sessions aimed in either the task or the affective direction, or both, but we would call them all sessions high on work.

We would now like to advance and defend the central thesis of this chapter, perhaps even of the whole study. We are prepared to argue that the proper goal of the college classroom is work. Pursuit of the various task goals outlined in the teacher-as typology is not enough, and neither is pursuit of interpersonal satisfaction. The first reality of the college classroom is that its very existence and legitimacy derive from its connections with the task goals, but as soon as any collection of individuals come together to perform any task the pursuit of the task is inextricably bound up with the emotional and interpersonal realities which come into being. As soon as the group gets under way, the dual reality, the task and affective reality, presses on all the group members, and we have chosen to call this double-edged problem-solving activity the process of work.

If we define work as a problem-solving process addressed to the simultaneous achievement of task goals and the reduction of disruptive affect, it is clear that the particular classroom activities we would call work would vary in numerous ways. First, work would vary as a function of which aspects of the task goals were most pressing at the moment. If the teacher and the class were at the moment struggling to figure out what Freud meant by primary process, work would look one way, but if the task goal were to facilitate student creativity in choosing term papers, it would look quite different. Second, work would vary as a function of the then-current set of affective or interpersonal problems needing to be faced and resolved. If everyone in the class was really quite content with the focus and progress of the class, the class at work could and would look highly task-oriented, but if the teacher and the class were sinking further and further into mutual distrust and hostility, to plow on with the content in the same way would be the very opposite of work. Work is doing what needs to be done, and one point we hope this study has made is that the needs of a classroom group are not addressed solely to intellectual or task goals. Finally, the question of what constitutes work is inseparable from the individual and collective histories of the group members. Work in a class filled with embittered rejects from a callous school system would not be the same as work in a class of docile but self-deprecating college freshmen. Neither would work in a class which has handled effectively its earlier crises be the same as in a class where emotional issues have accumulated and festered to the point where only direct expression will revive any sense of optimism that they can be solved.

We wish now to address ourselves to the general question: What are the obstacles to work in the classroom? Our analysis of classroom interaction provides us with quite an array of obstacles, and the interaction among the various determinants of how the class is going generates a set of obstacles of dazzling complexity. The main argument of the book thus far has been that the teacher and/or the students are deflected from their mutual task goals by the pressure of disruptive affect, by the rearrangement of priorities, and by unmanageable amounts of anxiety, hostility, depression, or any of the various affective states already discussed. However, the complexity grows as one begins to take account of the variations among students. Different clusters of students are deflected from the task goals by quite different emotions, and each cluster places uniquely disruptive pressures on the teacher. But even this turns out to be nowhere nearly complicated enough; we have tried to show how as the classroom develops over time the teacher and the various clusters of students are changing the basis and quality of their relationship in rather dramatic ways. These variations in the stage of group development are associated with different concerns, different crises, and different affective impediments to the task at hand.

In attempting this summary we will review one at a time the six components of the task relationship between the teacher and the class, although by arranging things this way we must inevitably do an injustice to the all-important issue of how these task functions are balanced against one another. We will need to make frequent references to the interplay between these six aspects of the task, but we hope, by separating these functions out, to show some of the major obstacles to establishing an effective task relationship. Effectiveness here means simply that in the pursuit of the particular task function the larger goal of work is advanced rather than the more frequent outcome, in which disruptive affect gradually strangles and destroys both the task itself and the hope of creating a well-integrated work group.

The Issue of Expertise. If we turn first to the teacher as expert and look back over our data, what seems to be standing in the way of a satisfactory resolution of both the teacher's and the student's needs in this direction? The issue focuses around competence primarily. It would seem quite straightforward really; the teacher has some knowledge to impart, the students something to learn. What can go wrong?

One thing which happens, perhaps on the first day, perhaps only later, and perhaps all term long, can be described as the coming together of a scornful and disappointed teacher with a set of students whose reactions vary from anxiety to depression to bitter resentment over the negative evaluation being received from the teacher. Since the central focus of the teacher as expert is upon the course content, it is not surprising that the teacher's concerns tend, often in the early sessions, to include evaluations of what the students bring with them to the class: their "intelligence", their mastery of the content of previous courses, and their ability to engage in interesting, intellectual dialogue. On the other hand, neither is it surprising that some students arrive on the first day prepared to be terribly impressed by the competence of their instructor, while others arrive not as much prepared to concede the point but, instead, to resist as long as they can being defined as stupid, ignorant, or unsophisticated. In the case studies of the classes of both Mr. B and Mr. D there was from the start a clear pattern: barely concealed manifestations of intellectual scorn and disappointment with the students paired with a wide variety of student responses to this pressure. Some students were scared, awed, and many of these became the unresponsive low participators; some became depressed at the combined pressure of the teacher's scorn and the rejection of any efforts to establish friendly relations with the teacher; while others began to fight, to begin the long process of demonstrating their own competence.

There is no reason why this alternative in the effective relationship in the expert area need come first, and in Mr. C's class this point was in fact rather delayed thanks in part to Mr. C's effusive, whirlwind style at the beginning of his class. The point is that it did emerge in each group, and the reasons of this deserve a bit more discussion. There is considerable reason to believe that deciding that the students were not terribly bright served some important purposes of the teachers. It would be comforting to conclude that, since the teachers in this study were young graduate students whose purpose in being scornful had something to do with their own anxieties and their need to see undergraduates in this class as less able than the students where they themselves had graduated, older teachers would be less likely to be scornful, their situation being fundamentally different. It would be comforting, but we doubt this is the case. Young graduate students are not the only teachers afflicted by what we might call the "pearls before swine" phenomenon. Many teachers simply have not, at least when they walk in the door on the first day, figured out whether their students are worth the time and energy which it will take to convey to them part of their accumulated expertise. Whether the issue is that the teacher is boosting his own ego or rationalizing his low investment, or some other issue entirely, it is not uncommon to detect those signs of scorn, arrogance, or intellectual superiority so bound up with this particular distortion of the expert relationship.

How do the students react when faced with what they perceive to be their knowledgeable, intelligent, and perhaps slightly superior teacher? Life would be simple if "students" connoted a set of individuals who reacted uniformly to this or any other press from the teacher. However, the facts are that the students interpret this initial manifestation of the teacher's expertise in fundamentally different ways. Even to talk of clusters is to obscure the uniqueness of the diverse individuals, but we wish to settle for some level of generalization intermediate between all students and each student. In terms, then, of the eight clusters of students (counting here the low participators as the eighth cluster), we can ask again about the student's reactions.

The most immediate and probably the most lastingly negative impact falls upon the students in cluster two. These anxious, intellectually self-deprecating students find in the teacher's early display of his erudition and brilliance ample grounds for their pessimistic and fearful estimate of their chances of survival. What they are feeling and what they are likely to say are not the same thing, however. Given their uneasiness over whether they will fail the course, since both the teacher and most of the other students are so much smarter than they are, it is not surprising that they tend to conceal their feelings of intellectual inadequacy behind a barrage of questions designed to clarify the teacher's demands and standards of evaluation. The message to the teacher as expert is clear: "Am I going to have to be capable of your level of performance in the exams, or can I get by with my usual pattern of memorizing the text and the high points of the lecture notes?" The cumulative effect of these questions on the teacher is also rather predictable. How ever he feels about the unspoken awe underlying these questions, the teacher may be confirmed in his suspicion that these students are uninteresting and unworthy "grade-grubbers", thus deepening his scorn and thereby intensifying at least some student's growing feelings of being in dangerous territory.

Two other reactions to the teacher's initial presentation of himself as expert should be mentioned. For many students the teacher's expertise was precisely what they had expected, and their responses conveyed their already considerable talents at managing such situations. Whether we are talking of the cluster one students, with their compliant, eager style of saying the expected thing, the more independent and self-assured students in cluster four, or the loquacious and attention-seeking students in cluster seven, the teacher can expect to find at least some students who are ready, able, and willing to discuss the readings or a previous lecture without a great deal of attendant distress or affective disruption. However, when we turn to clusters five and six, made up, in our study at least, largely of males, we encounter another outcome altogether. To the extent the teacher's self-assertion of himself as expert has conveyed feelings of superiority or has been intertwined with his role as formal authority, the content material becomes the medium through which the messages of challenge and contention will flow. Each content assertion by the teacher becomes the gauntlet flung at the already rebellious students, and they react as if the unspoken message from the teacher had been, "Are you going to believe what I say just because I say so?" Thus begins the fight, carried on at times over the most trivial of assertions, and the content of the teacher's expertise becomes, at least for a while, hopelessly confounded with his authority position.

These students, especially in Mr. B's class, help us to identify a second obstacle to the establishment of the teacher as an effective expert. Their goal seems quite simply to have been one of proving to the class and to the teacher that his competence was definitely not something which could be taken for granted. It had to be proved. In all the classes the first exam had a rather similar effect; the great struggle over the correct answers to various questions could not help but challenge the teacher's position of expert. However, in Mr. B's class the crisis came earlier, and, unfortunately for Mr. B, it came during a period when his interest and ability in the particular content material was hardly at its highest point. In another class the assault on the teacher's expertise was even more immediate.

The negative outcome in the expert area we need to delineate here joins together a teacher who seems quite apprehensive, even a bit discouraged with himself and his ability, with a set of contentious, scornful students trying their best to prove the teacher wrong of self-contradictory whenever they can. In many ways this is simply the reverse of the scene painted first; now it is the teacher's self-esteem which is under pressure.

The case material, especially from Mr. A's and Mr. B's class, suggested that we are dealing in this instance less with a direct assault upon the teacher's competence than with one of the many confusions we have noticed, a confusion of what is at issue, with the teacher defining the situations quite differently from the students. Most of the serious efforts to challenge the teacher over content matters derived at least part of their not inconsiderable intensity from the student's surplus anger over other issues, usually ones we would call issues directed to the teacher as formal authority. The teacher's power to grade is inextricably entangled with his competence to grade, and the students, especially those in clusters five and six, loaded up any available "content issues" with their more covert interest in challenging the authority of the teacher. It would seem that at least some of these students (especially those in cluster six) were endeavoring to create an alternative to the evaluation situation where the only issue was one's competence. To the extent that the teacher could be pushed and goaded into an authoritarian panic, defending his answers by reference to his own or someone else's putative authority, then a good grade would mean how much of a toady one had been, thus submerging the more threatening implication that a grade measures competence. In this and other ways the counterpressures do build up, from some because they are angered by the teacher's arrogance and from others because the expertise-competence issue is a useful smoke screen behind which to test out matters of power and control. When to these counterpressures we add the more capable challenges of the independent cluster four students, whose contention often has a rather condescending tone as they try to enlighten the teachers from the vantage point of their own major field, it is not difficult to understand why some teachers are at this point a bit shaken in their intellectual self-esteem.

The third negative outcome in the expert area, negative in the sense that it led repeatedly to unhandled disruptive affect, was for all the teachers an integral part of the discouraged, unpleasant phase leading up to the midway point in the term. In contrast to the teacher-scorning-students and the students-challenging-teacher outcomes, this might best be called teacher abdication. Some teachers start off their class this way, sometimes with disastrous consequences, but these four teachers came, via quite different paths, to a point where they felt impelled to pull back from the expert role. Their conscious goal seems usually to have been one of "getting more discussion," but in each case there were clearly other goals involved. For Mr. D, whose retreat from the expert role was hardly a total abandonment of it, the goal was to relieve the pressure on the students, to lift the mood of anxiety and gloom, and to alter the student's sullen unresponsiveness. For Mr. B, on the other hand, the decision to move the chairs and to define himself as consultant rather than the expert was a retreat as well from the counterpressures on him as expert and formal authority.

Looked at in the light of the literature of teacher-centered versus student-centered teaching (McKeachie, 1967) these shifts might seem to offer some real hope for the classes. How democratic, how nice of the teacher to let the students have their chance to speak! And yet, as the group development chapter made clear, these phases were the low point of the term. They may, as we have argued, have been necessary for future developments, but all four teachers recoiled emphatically from the reactive, colleague style associated with this phase. What was happening? What were the disruptive affects associated with this negative outcome?

Perhaps it would be fair to say that all the teachers made two rather crucial mistakes: (1) they underestimated the extent to which they needed to feel good about their own contributions to the class in their role as expert, and (2) they overestimated the extent to which they would find interesting and valuable the contributions by students. Thus as facilitators they had set loose a series of discussions which, in their capacity as experts, made them increasingly concerned about whether they were "teaching anything" and increasingly eager to recapture the floor. We have suggested that out of this rather unsatisfying period came some important developments, the main one being an increased sense of respect for the student's capacities— a respect which while increased, was evidently still not at a level sufficient to permit them to sit back and listen any longer.

If the period of teacher abdication had some rather negative consequences for the teacher's affective state, what about the students? Again, one simply cannot generalize across students or clusters of students. The students whose previous contention and challenge had set in motion this retreat were probably the happiest about the whole thing. The independent and the rebellious students did much to keep things going, but to the extent that the teacher felt impelled to have the last (and presumably the correct) word, their pleasure was mixed with mistrust and anger. Other students whose main goal was to impress the teacher found it confusing to have other students as the major audience for their contributions. Undoubtedly, the unhappiest students during this period were those in clusters one and two. The cluster one students, accustomed as they were to external rewards from on high, became increasingly perturbed at the wandering, "irrelevant" conversations. Their response was to put increasing pressure on the teacher to "wrap things up" and to "tell the class when it is off the topic."

Equally distressed, but for different reasons, were the grade-conscious members of cluster two. They agonized at any sign that the teacher was becoming self-deprecating, hurrying to reassure the teacher that he really did know more than anyone, but even more commonly they found themselves unable to join the student discussions. Given their preoccupation with grades, they found student comments concerning "stuff which obviously wasn't going to be on the exam" boring and wasteful of class time. The teacher as expert was quite obviously the man to say those things with which one fills up one's notebook. Their guilt-inducing remarks about how this just was not going to help anyone learn the course content hit the teacher in a weak spot, and the teacher's growing impatience with his own abdication can be directly traced not only to his own misgivings but to the anger and distress stirred up in a significant segment of the class.

Thus the particular kind of negative outcomes for students which accompanied the teacher's abdication of his role as expert varied considerably. In the class where the teacher's abdication was extreme (Mr. B's class) the students "carried on," some with increased involvement and some with increasing disgust for their fellow students and annoyance at their "do-nothing" teacher. To the extent that the new egalitarianism seemed "phony," with the teacher only seeming to let go of the tether, coming in from time to time to give the "right" answer, a certain frustration seems to grow up, a feeling of playing games. To the extent that the first negative outcome described above, teacher scorn and student distress, had preceded and still accompanied this phase, there is evidence that the students directed toward each other the scornful and critical mode of being the expert they had learned in that classroom. The males in Mr. D's class were particularly comtemptuous of the females; various individual students bickered overtly and condemned their peers in the ratings and interviews. The import of these outcomes is that one would need to know a good bit about what had preceded any backing off by the teacher from the expert role in order to predict what form the disruptive affect would take. What seems more general is that premature gestures in the direction of student-centeredness are no magical pancaea. Simply to say to oneself and the class that now is the time to have the class take over the expert function seems, prior to the accumulation of more genuine regard and self-confidence, to head into a cul de sac.

The way out of this impasse was, for all four teachers, a strikingly similar move toward the role of formal, proactive expert. Under propitious circumstances this move represented a way station enroute to work, a seemingly necessary step for these teachers as a result of which they were able to integrate their job as expert with the various other teaching functions. Before discussing this denouement, we would now like to discuss the fourth negative variant of the teacher as expert, the outcome which fits best the classes of Mr. A and Mr. D. In neither case was the move to formality and lecturing a temporary and useful way-station; it became the way to survive until the end of the term. The negative outcome we envision here pairs up a proactive, formal teacher with a class many of whose members have given up hope for much of anything else besides a decent grade and a chance to start over again in another class. Since this acutely negative outcome was an outgrowth of the move, common to all four teachers, to return to a lecture style following the abortive period of abdication, it may be well to look at the period of increased teacher formality and dominance. For all the teachers this move was accompanied by a sense of relief. New horizons opened up, the chance to lecture to a group with which one was now rather well acquainted. It was, as we shall discuss shortly, a chance to carry out the gratifying role of teachers as ego ideal. For the teacher to "come on strong" had the effect of clearing the air; it was a welcome change from the tortured and not very satisfying periods of discouragement and early enactment.

If this period was welcome to the teacher, how did the students feel about it? The picture across the four classes is somewhat uneven, but several things are clear. The cluster one and two students who had chafed under the student-centered regimen were more satisfied, more active, and, it would seem, more effective when they did speak. The most negative effect seems to have fallen on the cluster five students. Although this effect was minimized in Mr. C's class by the vigor and mutual validation of the confrontation which preceded it, this phase of teacher formality and distance seemed to most cluster five students like a betrayal. That this was so can be understood only if one recalls the needs for fusion and identity with the teacher which these males concealed behind their rebellious fronts. These students, with their delicately balanced needs for individuality and colleagueship with the teacher, experienced the sudden return to lecturing as a demeaning rejection of all they had done in the class thus far. After all, had they not carried the ball, defending the teacher from the clinging, dependent students who only wanted to know how to get a good grade? Had they not been the ones who were brave enough to be creative and interesting? The return to formality was not well received by this cluster. Other clusters reacted with less intensity: the passive, aggressive students of cluster six seemed to be relieved to have returned to familiar territory; the impulsive, talkative members of cluster seven seem to have tolerated this evidence of the teacher's narcissism as a reasonable move on his part; and the cluster three students seem to have been rather less pleased with this new development.

The crucial question, however, is not one of how the students reacted to this sudden move away from discussion but of how, or if, the teachers and students ever moved beyond this phase. Mr. D really did not ever alter course after this point, whereas Mr. B and Mr. C, with considerable help from the class, made their way toward a more balanced arrangement, one in which work was possible both because the teacher's expert functions were in and of themselves well handled and because pursuit of these functions did not lessen the effectiveness of the group's pursuit of the other aspects of teaching and learning. Much of this cannot be discussed fully until we have considered the five other aspects of the task, and thus we will defer further comment until that point in our analysis. We are tempted to conclude from our data that when the proactive, formal phase means not simply a temporary increase in teacher as expert (and ego ideal) but means instead a collapse of the group's ability or willingness to pursue creatively the other aspects of the task, then the group will begin to hold its breath and wait for the end of the term. Particularly crucial here is the gradual elimination from active involvement of first the rebellious students, then the rather personalizing (even sexualizing) students, and then the more independent and competent students, until all the teacher has left to deal with in his capacity as expert are the "good students," who will also drop by the wayside if too much scorn for their not very original efforts is mixed in with his expert functions, and the anxious, grade-oriented students who will probably be taking notes at a furious rate, if they haven't already given up hope of passing the course. Instead of being one, but only one, of the tasks facing the class, the mastery of content, since it is so obviously legitimate and since time can be filled so routinely in this way, can become the functional equivalent of the ticking of the clock, each fact bringing the class closer to its universally desired end.

The issue of formal authority. As we turn from the issues raised by the teacher as expert to the equally pressing problems raised by the teachers as formal authority, we are struck by one contrast in the early sessions. In each group studied, the students received a far more confusing and disturbing initial set of messages from the teacher over the question of authority than they did over the competence issue. We have reviewed, in the expert area, how the teacher tried, unilaterally and without complete success, to establish himself as the expert in the eyes of the students. Quite parallel were the early efforts by the teachers to establish themselves as the legitimate authority in the group. This parallel extends not only to their intensions but to the array of consequences, an array which inclues compliance, the first stirrings of rebellion, and the diverse signs of student distress.

The reasons for this initial effort varied across teachers, of course, but they shared in common an inclination to display their connectedness with the larger system, the university with its deadlines, grade sheets, and established ways. Here the similarities with the teacher as expert begin to give way to differences. The teachers were evidently far more willing to present themselves as experts than to take full responsibility for the rules and requirements which they were laying on the students. Thus the confusion began over who really was to be held responsible. Who can be blamed if some students do poorly or if the methods of evaluation seem incongruent with the desires and abilities of the students? The first gestures of dominance and control seem rather ambiguous. As the teacher attempts to pass along the responsibility to "the system," often with a clear implication that he too is subject to (and chafing under) the vagaries of an insensitive bureaucracy, the student's sense of helplessness grows apace. Is there or is there not a person who will represent the system? Or is there something to be gained by playing off the teacher against the system, setting the teacher against his own authority structure? Many of the student's early maneuvering suggests that questions such as these are on their minds. Thus one confusion in the establishment of the teacher as the authority derives from the teacher's ambiguous location of himself within the bureaucracy of the university, but other pressures are generated simply by the unambiguous efforts of the teacher to have his way from the start. Armed with the grade sheet as the final weapon, the teacher unfolded, sometimes with exasperating casualness, the full array of"what-to-do's and how-to-do-it's." For some students, and those in cluster six especially, the net effect of all this was that they adopted a strategy of resistance limit testing, and that marvelously subtle gambit of leading teachers into increasingly petty and self-contradictory demands in order to make them show just how assinine authority figures can be. For other students, particularly the compliant and insecure students in clusters one and two, the early emergence of the teacher as formal authority set in motion far more genuine and even pathetic strategies which reflected both the anxiety and the dependency of these students in the face of authority.

But all of this was only one part of the pressure on the students, and it may be that taken alone most students could have managed quite well. Unfortunately, shuffled in among the messages which read, "I am the authority around here (or at least someone upstairs told me I could act as if I am)," were messages which greatly confused the scene. These other messages said, in effect, "Since this is college and not high school, since I am an expert not a drill master, since you should care about the intrinsic rewards of learning and not the silly grades, then kindly refrain from expressing any anxiety, dependence, or resentment, because we have work to do." It would be impossible to tell whether this second message was largely in response to the student's concerns, which had in their turn been stimulated by the teacher's efforts to establish his position of authority, or whether, regardless of the student's reactions, some teachers would still have needed to send this second message. Be that as it may, the function of the message was certainly a complex one. There is ample evidence in our study that these teachers did not like to be on the receiving end of student's expressions of anxiety. The teachers, when they moved they moved to emphasize the intrinsic rewards of learning or when they tried to brush aside as childish and annoying the student's efforts to clarify the formal authority issues raised usually by the teacher himself, were trying to disown their actual place in the power structure whose hold over the students was not that easily loosened.

We recognize that different teachers will strike a different balance on these matters, and presumably some teachers can negotiate their way through early authority crises without arousing much disruptive affect in any quarter. We are struck, however, in this study by how regularly the students were put into an extremely difficult bind by the teacher's intitial presentations.

Buffeted from one side by clear, but somewhat disowned, pressures to comply with rather specific demands, the students fanned out into reactive strategies which they hoped would accomodate them to this new situation. No sooner had these accomodations begun, all of which defined the teacher as the authority, when they were buffeted from the other side, accused of being preoccupied with authority issues, as evidenced by their anxiety, their quibbling over grading policy, or their excessive acquiesence. If work has to do with a group's ability to confront reality and to develop effective ways of altering what needs to be altered, then this joint pressure on the students must be called a major obstacle to work. Born of the teacher's desire not to be (or to be seen as) an authoritarian monster, born of the teacher's desire not to be surrounded by passive, uninteresting companions, and born of the teacher's equally compelling need to establish and keep control of the class, this complicated set of pressures generated a serious distortion of the fundamental reality of the classroom.

The reality of the classroom, from the student's point of view, was hardly a uniform entity. The students in cluster one, most of whom were females, represented one reality: arriving at this class with a history of effective submission, they were prepared to express by their dependent gestures their full acceptance of the teacher's legitimacy as formal authority. Whatever their educational philosophy, all four teachers had occasion to be grateful for the support given them by these loyal members of the class, but in the early sessions one cannot always distinguish these students from the more irritating members of clusters two and six. Cluster two contained students who were so afraid of failing or being proved stupid that they demanded more clarity about formal authority matters than these young teachers could provide. In contrast, however, the cluster six students tended more to see the issues of papers and exams as a challenge to their ability to beat the system. Their inconsistently irksome efforts to challenge the teacher were not so much in the service of anxiety reduction as they were in the service of their need to preserve their indifference to the established order, but in order to have a system one can beat, without defeating it altogether, one must have a system which is clear in its goals and absurd, petty, or ridiculous in its execution of these goals. Thus from one side the teacher was pressured by students who, for very different reasons, wanted more clarity and more guidelines, while from the other side he was pressured by the more rebellious and, to some extent, the more independent students. The teacher who in one ear hears, "What percent is each quiz going to count?" while in the other ear he hears, "Hey, why don't we all grade ourselves!" is in a very difficult bind. In response to the latter, he may, fearing the students will get "out of control" respond with coldness and still further assertions of his authority; to the former, who are pleading for control, he may become disdainful, as if such concerns over grading were already evidences of a second-class mind, and, in the process, he will probably end up insulting even more students than those who had provoked him. Another possibility is that, early on or after consistent attacks from the rebellious minority, he may be tempted to deny the reality of his formal position in the classroom.

One of the major distortions of reality to which the teacher can contribute is the outcome we might call premature or insincere abdication of authority. As in the case when the teacher affects uselessness over matters of intellectual competence, the various gestures of turning over to the class control over grades or work assignments can have many meanings and many effects. The question is one of reality, not of how egalitarian this or that structural change might seem. The crucial issue is one of unilateral versus bilateral transfer of power. The unilateral transfer of power ("All right, class, now you have the right to determine your own grades.") may work, but it may not, for rather understandable reasons. For some students, especially those in clusters one and two, the whole idea of the teacher not playing his "proper" role is distressing and even a little disgusting. But for many others, even those who fervently wish to have more of a say about assignments and grades, the unilateral transfer of power is connected with the not very reassuring thought that "The Lord giveth and the Lord taketh away." If the teacher is still some kind of lord or philanthropist doling out power when he feels like it, who knows what has really happened? "What if we give ourselves all A's?" they begin to wonder; "Will he step in and say that that isn't within our power?"

To return to the issues of competence and mutual respect for a moment, we asserted earlier that the teacher can praise and flatter and turn the discussion over to the students all he wants, but if he doesn't really trust or esteem them, if he isn't really ready to be quiet and listen, and if they simply don't recognize themselves in all that flattery, then it will create more disruptive affect than it will reduce. Just as work flows out of activities in the expert area only when genuine respect for an increasing number of the participants reduces the feelings of being stupid or scornful or hurt, so too work flows out of the authority area when an increasing number of the participants feel that the current distribution of legitimacy and power to affect change has been arrived at bilaterally or, more properly, multilaterally.

How does a group come to create a stable authority realtionship? What does the evidence from the four groups have to say about this? Two processes seem to stand out: confrontation and the gradual "withering away" of authorissues. The function of the confrontation in these groups would seem to be more one of flushing out the power issues than of causing, in and of itself, a drastic change in the distribution of power. Much of what we have said about the negative or unsatisfactory solution to the issue of authority has revolved around the quality of irreality generated by both the "get off my back and stop bothering me with your dependency" and the "Power, what power? We're all equal here" strategies. As the essential instability of these strategies became clear, usually around the time of the first exam, all of the groups moved into a period of direct challenge to the teacher's authority. In some classes the confrontation was fairly heated; in others the student's anger was stifled and resulted only in a prolonged, bickering fight over exam points.

Our data indicate that the more direct and productive confrontations were led by the rebellious cluster five and the independent cluster four students. Parenthetically, the very process of expressing any anger or resentment toward the teacher was rather disturbing to the intrapunitive students in cluster three and even more so to the tightly controlled and anxious members of cluster two. The more petty, and in the end, self-defeating sorts of confrontations seem to have been led by the provocative but basically more passive and pessimistic members of cluster six.

More than anything else, and especially when the challenge was reasonably open and direct, the confrontation provoked the teacher into taking more responsibility for the matters directly associated with his formal authority. "Yes," he seemed to begin saying, "I am indeed the man with the grade sheet, the man appointed by the department, the dean, and the regents to teach, evaluate, and send in the grades." If this was one outcome of the confrontation, is it surprising or paradoxical that, again especially when the challenge was direct, the confrontation led also to what we might call the multilateral transfer of power?

Having established that, in fact, his power and authority were real, the teacher could begin to share it, only now the sharing seemed less like a gift than a set of genuine concessions to the further realities of the situation as it had evolved. How did this happen? Through a whole series of specific requests, not by a great pronouncement from high. Examples come to mind: "Yes, that was a lousy question, and you five guys should add a point to your score;" No, you don't have to turn the paper in next Monday if you really can't do it. Get it in as soon as you can;" or "What shall we do today?" Not great victories, but developments which contributed, in two classes especially, to the graduate erosion of concerns over power and control issues.

It so happened that the two classes which made real headway on the authority issue ended up with a far more democratic, egalitarian structure than they started with, and, we have claimed, they arrived there only after the essentially authoritarian structure with which every class begins had been revealed for all to see. Furthermore, it just so happened that one class, Mr. D's, which ended up with little progress toward any multilateral transferring of power was also the class in which an unproductive student docility characterized the last third of the sessions. Does this mean that the move toward democracy is "a good thing?" We are not prepared to argue that it is—certainly not for all teachers. Not only are many of the early, unilateral efforts to create a democratic group by fiat doomed to prove unstable, but we are not even sure that Mr. D, for example, could have possibly been convinced that the student's view on what they needed and what grades they deserved should prevail over his views. What then could he contribute to a democratic group but the empty forms of democracy, a miniature of the make-believe democratic forms which characterize student government councils on the larger college scene? To advocate that the goal of the classroom is work is to advocate that reality be served, not that reality be disguised in the trappings of democracy or any other structural form in which group members cannot be honest to their convictions. We shall return to this in a later chapter, but for now suffice it to say that having advocated that no teacher should create artificial democratic forms, we need to add a few more thoughts: (1) this is not to overlook the options neglected by some *but not all* autocratic teachers of reducing to the lowest possible level the distress and anger created by such structures, and (2) this is not, in addition, to urge that the students whose blood boils at the sight of power unevenly distributed must sit back and accept this arrangement. Maybe the confrontation will produce genuine concessions.

The gradual withering away of the authority issue is accompanied, in those classes when it happened at all, by an increasing sense of involvement in other classes, other aspects of the teacher's total function. Important reductions in the tension and resentment over the teacher as formal authority followed from sessions in which the teacher's expertise provided the teacher followed from sessions in which the teacher's expertise provided the teacher with *earned* legitimacy in contrast to the *ascribed* legitimacy he possessed on the first day of class. Similar reductions in disruptive affect followed sessions in which the teacher as peer, as a person, came into sharper focus. It would be a mistake to assume that when we refer to the disruptive affect generated by the teacher as formal authority we mean only such phenomena as cluster five's rebelliousness or cluster two's manifest anxiety. The uncritical identification of the cluster one students with the teacher's role and power, and the compliant style which their dependency has produced, are disruptive affects in the very important sense that they disrupt the other tasks facing the class. To the extent that the teacher as expert or socializing agent places a high value on critical thinking, or to the extent that the teacher as facilitator places a high value on originality and creativity, the placid conformity of the cluster one students and their adaptation to the teacher as formal authority is as disruptive of their total learning tasks as the more dramatic disruptions of any other cluster.

It turns out that the establishment of legitimate authority, as was the case for mutual intellectual respect, is not something one can rush. The natural process of its development seems to include some rather unlikely, and often unpleasant, antecedents and way-stations. The dependency, anxiety, and self-deprecation of some students cannot be waved away with a magic wand; neither can the anarchic or rebellious inclinations of other students. By the same token the teacher's annoyance at being seen as mean or arbitrary is real, as is his frustration at being constantly challenged by one segment of the class. What we have tried to show is how these various potentially disruptive affects lead in two directions: one path leads to the whole array of strategies which either intensify whatever affect is being stirred up or create new and equally disruptive disturbances; the other path leads to work, to the ability to face the reality of the situation and the reality of the feelings stirred up by it, and then to develop collectively creative solutions which reduce or bind in the disruptive affect and permit the group to move ahead on this and all other aspects of the task.

The issue of socialization. While the activities of the teacher as socializing agent overlap considerably with those of the teacher as expert or formal authority, some rather different issues are raised in this aspect of teaching, and our focus here will be upon the uniqueness of this teaching function and its impact on the students. Given the fact that the teacher stands before his class as the representative and gate-keeper for a whole series of interlocking collectivities (his department and field, the community of gentlemen, scholars, radical intellectuals, or whatever), what kinds of affective disturbances develop over time?

It should be pointed out that not all the students are interested in this aspect of the teacher. The older and more independent members of cluster four are just visiting; they tend to already have concentration and career lines worked out. The quarrelsome cluster six students and the loquacious students in cluster seven also seem relatively uninterested in using the teacher as a stepping-stone into some further occupational grouping. One of the most interesting pictures, however, comes from the anxious, grade-oriented members of cluster two. Although for many the fear of failure blinds them to anything beyond or behind the particular course, for a significant portion the world of psychology in particular and of academic (as opposed to religious) views of man can be both liberating and exciting. The professor becomes the antagonist who can challenge the teachings of his parents and his home culture; at the very least, the intellectual's value of being able to tolerate ambiguity represents a useful prop for those trying to break free of traditional subcultures.

For two clusters of students the teacher as socializing agent can be very important: the cluster one students, with their tendency to identify with the teacher's role and their sense of wanting to be teachers, helpers, or good parents themselves, and the small group of sturrling and rather depressive members of cluster three. If, then, the teacher can expect to encounter some who welcome his gate-keeping, and some who are indifferent to it, where do things begin to go awry?

Perhaps one answer will flow rather directly from an exaggeration, a parody of the teacher as socializing agent. Consider the parallels between the teacher who represents his field and his significant reference groups and the white racist school teacher or the missionary newly arrived among the heathens. The double pressure placed upon those being socialized combines (a) the insensitive intrusion of an alien and purportedly superior culture upon the "unwashed" and (b) the tendency, simultaneous with the other, to defend the "purity of the stock" by not allowing "just anyone" to be passed along to the next screening process. The missionary's optimism about spreading the work to all men is confounded often with the disheartening, but also rather necessary, conclusion that some people are too stubborn or too hopeless to accept the word. Whether the missionary in question be a white teacher in the ghetto or an intellectual holding out the allures of graduate school and the professional life, this duality of smugness about the superiority of one's group tends often to go hand in hand with the conviction that only a few converts have the qualities needed to become members of the inner circle.

To separate this double message for a moment, need we elaborate on how the rebellious members of cluster five or the needling and blasé members of cluster six would respond to the teacher's assertion that his culture is superior to that of the students? Even the independent students tend to be provoked by these assertions and to counterpose their culture, the perspective of their major, against that of the teacher. To the extent that the teacher insists that students must learn the jargon of his field, in this an introductory course, or to denounce publicly the absurdity of either their home culture or that of other fields in which they have taken courses, the contentious students begin to level against him the charge of brainwashing.

The mark of acceptance is subtle and complex, but in our study we found two important ways in which the teacher indicated his approval or disapproval of the student as neophyte. In one the teacher communicated by his willingness to drift into esoteric or "in" topics with some students his conviction that here was a student sufficiently sophisticated and interesting to be passed along to a higher levels of socialization. But perhaps the clearest and most painful process involved the use of grades. The issue tended to resolve into the distinction between an A and a B.

To back off for a moment, we have the sense that one of the secret rewards for the teacher as socializing agent is his own sense that whatever the outcome of the various battles over content matters, regardless of how well the student has mastered the material, there still remains a certain elusive quality which they, but only a few of the students, could be expected to possess. "No matter," says the master of Lowell House at Harvard, "how bright this young graduate student may be; if he wears green socks, he's obviously not one of us." "No matter," says the new graduate student teaching freshmen for the first time, whether I am challenged over the accuracy of a couple of facts here and there, few if any of the students can master the style of thinking, the tolerance of ambiguity, or the underlying value position which marks one as an intellectual." Given this tendency to comfort themselves with what, given the student's low probability of achieving it, might as well be called their ascriptive status, the grade becomes a terribly important signal to the student: "Stop where you are; try another field or another college," or "Go on into the series of courses at the end of which you will be part of the in group, 'my group'."

Thus to give an A or to give special encouragement to a student whom the teacher either does not think will "make it" or whom the teacher does not wish to have at some later date in his inner circle is to "cheapen the currency," to use a phrase heard rather widely in academic circles. But how can he turn off the eager but unacceptable student? There seem to be two ways, at least. To the rebellious, self-assertive, and immodest student, the one who presumes too much that he is already in, one can administer an "objective" test which reveals for all to see that in his enthusiasm to gain acceptance through developing his own unique approach to the field, he has failed to act the part of the lowly neophyte and learn "the basics," the fundamentals of the field. The students in cluster five, who are particularly poor at playing academic "Mother, may I?" games, are thus driven into a position of attacking rote learning and memorization, while the basic issue all along had been one of the teacher's efforts to screen them out of the selection process. At the other extreme, the students who do master most of the factual material and who do accept their lowly status, how does one screen them out? An essay exam in which it is revealed that they cannot "think for themselves" might help (since obviously one cannot have more conformists among the elect), but probably the most effective technique used by the four teachers in this study was to reject in class the fawning or overly identified students until they picked up the message that while they might get their B (or even A), they should not expect support from the teacher in "going on." Perhaps some less demanding sub-culture, like teaching grade school, but not "the field."

We have talked, with what we hope is forgivable sarcasm, about the teacher as a rather smug and rejecting sort of socializing agent. We are convinced that much of the student's anger, or what is more serious, their depressed feelings of being rejected, flows from this performance of the teacher. But we would be inaccurate to suggest that no work, no satisfactory outcome is connected with this aspect of teaching. As the team goes along, the students in a more successful class, such as Mr. B's or Mr. C's, become less "the masses" and more a set of distinct individuals. More of their talents become visible, and the meaning of taking more courses in the teacher's field becomes clearer. To that extent, then, the teacher may develop more regard for some students and what they could derive from and contribute to subsequent classes. Furthermore, we would not want to imply that the teachers err only in the direction of overstressing their socializing function. Faced with real and legitimate needs on the parts of the students to test out their path, some teachers, perhaps because their own identification with the field is unsteady, tend to conceal or deprecate the means to what students see as worthwhile ends. Perhaps the common elements behind the overstressing and the understressing of their socializing function tend to be: (1) that the teachers, for whom "the field" has had career implications, tend to blur the distinction between encouraging the student to explore more courses and telling him in effect that he should decide 'yes' or 'no' at this early stage on a career in the teacher's chosen field, and (2) that the teachers, by overlooking the complex personal and intellectual histories which the students bring with them, tend to exaggerate the potency of their signal, thus implying whether they thrust their judgment upon the student or withhold it from him, that he is not capable of integrating the teacher's judgment into his own reality. In contrast, the teachers who came to know the goals and skills of the individual students and who could place these in the context of the student's already developing values had less and less difficulty in offering what turned out to be useful information and encouragement for these students in their own private struggle to shape their careers and their lives.

The issue of facilitation. By this point in our review of the sources of disruptive affect we can begin to be somewhat economical in our presentation of each teaching function. The clusters which chafed most under excessive doses of the teacher as expert, formal authority, or socializing agent can be expected to react rather well to the teacher as facilitator. Conversely, the students who were perturbed by any departure from the structured, content-oriented mode of teaching can be understood if they resist the teacher's efforts to foster that vague and perhaps unreachable goal of student creativity. There are, however, some interesting and as yet not fully discussed issues buried in this aspect of the teacher-student relations, issues which bear not only on the encouragement of creativity but on the role of emotions and struggle in the development of work.

To sketch in the general situation briefly, it would not seem unfair to assert that while some teachers begin with what some students feel is too little emphasis on facilitation and other teachers are rather too permissive, the early sessions in our study were filled with the confusing and double-edged message we have discussed above. In terms of the facilitator role this early development begins with the teacher sending signals that the students should feel free to mold the general pattern of the course to fit their interests, should not hesitate to express their uneasiness or irritation, and should recognize the teacher before them as a non-authoritarian helper, there only to make it easier for them to reach their goals. In actual practice, this injunction to be free is soon mixed with other signals: "Well, in this field we don't view causality quite that way," or "Why don't you bring that up next Wednesday," or "There are, after all, certain constraints on the way in which grades must be turned in," etc. etc.

Why do teachers use (or misuse) the facilitator role this way? And what happens to the students in all this? Most teachers, certainly the ones we have studied here, seem to be only partially at ease with the fact that they have greater knowledge, power, and access to the inner sanctum of their various reference groups. Heaven forbid, they seem to be saying, that because of these differentials this course would encourage mere rote learning, mere conformity, and mere aping of the manners and vogues of the field. What then to do? The early facilitator messages, when they are indeed efforts to undo or prevent these dreaded consequences, fail to have the desired effect simply because the teachers are not saying what is true, only what they wish were true. Given their rather understandable lack of intellectual respect for the students, or their lack of trust in the student's judgment over plans and evaluations, they act to withdraw or negate the very freedoms they had just held out to the students. The consequences, which vary across the different clusters, include the increases in mistrust, resentment, uncertainty, and limit-testing we have already discussed.

One contrast between the sincerely meant and well-grounded efforts to be the facilitator and the unstable, unsuccessful efforts found in the first half of the group's history revolves around the teacher's denials of reality in a vitally important area: the abilities of the students. The premature, unilateral efforts to "give" the students freedom tend to be accompanied by an overestimation of how able and how ready the students are to do interesting work. It is as if the teachers were saying that, in contrast to colleagues who disparage student's capacities, they just know there is in the students a vast reservoir of fascinating ideas waiting to spring forth. Combined with the teacher's apparent unwillingness to stifle these potentialities with an alien (and oppressive) structure, the net result is a message which sounds like, "I expect nothing in particular from you, just that this be a sensational class."

If we shift from the first few sessions to the discouraged middle sessions, and even the period of early enactment, we find a major disruptive affect which we have not discussed yet. Beyond the anxiety generated in the insecure and/or conformist students, beyond the anger generated in those who are sensitive to the insincerity of it all, we find the humiliated and depressed reaction of those who feel they simply cannot fill the bill. We refer here not only to the rather chronically depressed students of cluster three; we refer as well to both the dependent and the counter-dependent students. Cut off from the clear structure within which they operate so well, the more compliant students found in cluster one suffer from the awareness that they are indeed lost. But even the males of clusters five and six begin to flounder some. For the "get by" students of cluster six, freedom in the context of the rapidly rising expectations which accompany the teacher's flattery is not a comfortable situation at all. For the rebellious students in cluster five the teacher who provides a blanket assurance of freedom, not genuine concessions, and a blanket assurance of his high opinion of all the students, not genuine regard for each of them as unique individuals, drains the challenge out of the situation and deprives them of their treasured fantasies of a special partnership with him. Furthermore, as freshmen they are not totally able to believe in their own worth. All in all, the early efforts at being the facilitator seem likely to place a heavy load on the students. Perhaps if the teacher did not need to reassure himself of the wisdom of his strategy by overpraising and overestimating the students it would turn out better.

One final observation on the teacher's excessive or premature efforts in the facilitator direction. For some students the teacher's permissiveness is experienced in quite another way from how the teacher has intended it. To them what it means is that the teacher just doesn't give a damn about the class, about them as individuals, and about whether they learn or don't learn anything. The students, perhaps especially those in clusters one and seven who count on a diffusely positive and attentive teacher in order to function well, can come to see what the teacher is handing out not as freedom but as rejection. Neither the normally acquiescent nor the normally self-demonstrative students of these two clusters are particularly likely to be offended by the teacher as expert and/or formal authority, and thus they are particularly unable to understand the reasons for his concessions in the face of pressures to undo the negative effects of these aspects of his role.

Not all early efforts to play the facilitator role fail, and in fact an increasing number of these efforts, responsive as they are more and more to the student's rather different needs for freedom, have the desired effect of clearing the path for a student, of encouraging him to follow down as expressed interest, or to simply of being interested in a student's ideas, and these effects develop over time the basis of the facilitating relationship. Freedom becomes a process instead of static virtue to be thrust on unwilling students. Perhaps always at the core of being helpful to another who is learning and growing there lies an awareness that goals which are meaningful are not easily formulated and easily reached. Far from being result of a harsh and total weaning, freedom means a slowly developed capacity to overcome obstacles, and here the teacher's role can become important without diminishing the student's freedom. Toward the end of the classes, we observe that the teacher as facilitator can more easily validate the student's discouragement or frustration, as if to say that "yes, indeed, it is hard." Complaining that something is hard is not always a prelude to quitting, but without the teacher or someone in the class to validate both the importance of the goal and the inevitable difficulties in reaching it, the student may be left at the mercy of shame and guilt that he is not progressing any faster. Complaining that something is hard is also not necessarily an accusation. The teacher as facilitator can, by listening, also validate the fundamental separateness of people in their separate pursuits if he can avoid becoming defensive or mistrustful in the face of the expectable signs that the tasks are difficult.

If this separateness is validated by the respect of another's goals and another's struggle, so too it is validated by the process of leaving room for the other's self-evaluations. It is no surprise that some of the most anxious students found their class memorable especially because of their efforts on an independent project. Freed from the oppressive presence of the teacher and their evidently superior classmates, these and other students needed and only sometimes received the permission to do something their own. They often chose questions which would have seemed embarrassingly naive to the class, but they went ahead and in the process managed as well to control at least a major share of the right to judge the value of their efforts. By a somewhat different route some of the rebellious males reached what was for them the pleasurable state of feeling that they were working for themselves and not the grade. These students, with their tendency to pursue special interests at the expense of full coverage of the course material, were to a considerable extent free, free from being ordinary and free from the teacher's every demand. The fact that their grade was "below their ability" was probably not a new experience for them. Thus all the way from the most anxious to the most heroic students, and at many points in between, the facilitating relationship did develop, not as Freedom but as private strugglings somehow not irrelevant to the presence of a useful but fundamentally separate person, the teacher as facilitator.

The issues of ego ideals. The single most drastic effect of the teacher's distress is probably found in the disruptive effect it has upon his ability to function as an ego ideal. Even granting the quite different characteristics which will cause students in different clusters to accept the teacher as an ego ideal, the dimension of self-assurance and enthusiasm vs. dullness and low self-esteem seems to be important throughout the development of a class.

What stands in the way of the teacher feeling good about himself in the classroom? Even a preliminary answer would take us back to all the entanglements and missed connections already discussed. Each bit of evidence that he is not respected or that he is too respected, that the students are uninterested or distressed, in short each bit of evidence which disconfirms the teacher's hopes and expectations serves to undercut his self-esteem. Thus when Mr. A finds that his students are not that easily intrigued by the raging battle between tough-minded and tender-minded psychologists, his performance falters, and his own ability to say anything interesting quickly drains away. Other teachers, having communicated in subtle ways that the material now being covered didn't interest them very much, would then be thrown off guard by the sudden barrage of contentiousness, and their lectures would become more and more filled with errors and apologetic corrections.

Thus especially in a small class the issue of the teacher's self-esteem arises early and seems, in our data at least, to be resolved only after a rather complex history. The teacher has some things on his side from the beginning, however. The students in cluster seven, for example, seem particularly prone to believing in their teacher. Why this should be is not entirely clear. Perhaps it helps that in their somewhat narcissistic way they fail to see the teacher or anyone else very clearly and tend, rather, to paint the world in rosy colors designed to reassure them that everything is all right. They, and the more depressive students in cluster three, tend as well to deny the existance of any negative characteristics of the teacher. From both these clusters then the teacher receives, at least at first, the sense of being admired and of being seen as strong and competent. From the compliant members of cluster one the teacher receives not only validation of his formal status but an extra portion of idealization; these students tend to identify with the teacher's role themselves and thus he is, potentially, an important model for their future careers. There are ways to disappoint each of these clusters, of course, but at least the teacher starts off in the plus column with them.

The situation with the rebellious cluster five students is considerably more complex. The interview data combined with our impression of these students in class has yielded the following picture. These male students were perhaps more deeply involved in the hope that the teacher would serve as a useful ego ideal than any other students, but their approach toward this goal was stormy and at times alienating. Their seemingly endless processes of testing the teacher derived from their need, in Erikson's terms, to preserve their own integrity and identity while at the same time moving closer to someone proved worthy of their fidelity. Fidelity was not something the teacher could demand, nor could it be sustained in the face of bland, unconditional acceptance. The teacher was tested to determine both his competence and his ability to enter into a mutually respected relationship in which more than the semblances of equality would prevail. Those few students in cluster five who managed to establish a satisfactory relationship with the teacher did so only after a prolong period of defiance and mistrust, interspersed with brief periods of joining forces with the teacher.

After numerous false starts, the teachers all managed, although in varying degrees, to arrive at the point of being more self-assured and comfortable with the material. This development began usually with the point, midway in term, when they took and held the floor for long periods of time. These more formal, lecture-dominated sessions had generally beneficial effects both upon the teacher and upon most students. The rebellious cluster five students were somewhat prone to feeling left in the lurch, and the intellectually insecure students in cluster two tended to feel even more weak and insignificant after a brilliantlecture, but these consequences were not insurmountable. As the lecture phase faded, especially in classes B and C, into a more mutual process of exchanging expertise and interests, the teacher as ego ideal became a more intermittent force in the classroom. The lectures became "lecturettes," and the admirable qualities of the teacher came to include not only what he knew but that he sometimes didn't know everything. His estimable qualities came more to be the intensity with which he tried to figure things out. This more accessible ego ideal could join for a while with the cluster five males in exploring matters of rather special interest to only some students, but he also could portray, in concert with his role as socializing agent, some of the real pleasures of being a young psychologist.

The issue of persons. The last of the teacher's functions to be discussed is that of developing a set of personal relationships which create a climate of acceptance and/or liking in which to carry on the task at hand. Let us say at the outset that we are rather struck by the extent to which, contrary to many teacher's fears, the students do not arrive at the class eager for a close, personal relationship with the teacher. We emphasize this now because evidently some teachers have so undifferentiated a sense of the interpersonal options in a classroom that even to imply that the teacher as a person is part of the total process conjures up images of "fun, but no work," "buddy-buddy," and other distortions of the classroom reality. On the basis of our data we could recount at least as many instances from the early sessions where the teacher made unreciprocated gestures of a personal sort as we could instances flowing in the opposite direction.

If we back off for a moment we can take stock of which students need and expect what from the teacher in the personal realm. Probably no cluster is more involved in the teacher as person than cluster seven. They seem particularly eager to reveal themselves, to have the teacher get to know them. But this is seldom a mutual proposition; at least not for a long while. Despite their joking, friendly, and occasionally flirtatious style, their goal in class is not one of establishing a friendship as much as it is to be liked and to be vivid in the eyes of the teacher. Thus, they find prolonged exposure to a cold and impersonal teacher quite discouraging, but no more so than a premature effort by the teacher to be self-revealing about his own misgivings regarding his performance. All in all, however, this cluster's inclination to focus more on the interpersonal relationship than on the intellectual tasks facing the group constitutes its most characteristic disruptive affect. We would be as concerned about how to reduce their pleasure at attracting and amusing yet another authority figure as we would about how to reduce cluster two's fear of failure. Both of these affects interfere with the full range of concerns confronting the group. These hand-waving, self-dramatizing students can be turned off, but, as most teachers found out, it takes effort, and it is a rather delicate operation. No matter how annoyed other, less talkative students may be at these cluster seven students, and no matter how glad they would be to have them be quiet, evidently this cannot be done harshly or with insensitivity without a sudden rush of identification with the victim and a correlated resentment at the teacher. Thus the teacher as person is constantly communicating to all the students just how trustworthy and decent he really is.

Several of the clusters, to add to the pressure already created by cluster seven, want the teacher to be scrupulously impersonal. The cluster six students, for whom the teacher is and should be the representative of the system they are trying to beat, can become particularly critical of the teacher when he becomes the least bit self-revealing. For them, and for the conformist and largely female members of cluster one, the whole issue of partiality and intimacy seems only to disrupt their chosen strategy. From these and occasionally other students the pressure is clearly to keep things impersonal, objective, and distant. The situation for the cluster two students, however, is considerably more intricate. Despite the fact they are usually much too anxious to indicate any personal feelings themselves their two years later memories of their teacher were particularly likely, if such was at all appropriate, to indicate how much they had gained from the fact that their teacher liked and was genuinely concerned about them. This reaction of being touched by personal attention was something which flowed usually out of events in the later sessions.

Lest we seem to imply that pressures on the teacher to be a person mean only pressures to be warm, we should mention how very important it was to the defiant cluster five students that the teacher takes seriously their anger and their criticisms. Clearly one way for the teacher to vacate his role as person is to remain bland and unruffled when a student makes a personal attack. Far more than warmth or total acceptance, these and many other students seem to be seeking a quality of personal authenticity in their teacher. As this need goes unmet and they conclude angrily that their teacher is not "for real," their involvement gives way to mistrust and alienation.

Faced as he is with the by now familiar cross pressures and conflicting messages, what does the teacher do? Some try too early, before the students are at all capable of handling it (or even recognizing the motives behind it), to express the various feelings of uneasiness, discouragement, or irritation which the new class has aroused in them. At least in the classes we have studied we would be hard pressed to locate many times when this move on the teacher's part was met with a response which the teacher found satisfactory. However, in two of the classes especially (B and C) we noted in the final third or quarter of the term some dramatic shifts by the teacher in the direction of the teacher as person. We mean here not simply that he was more open but that, in addition, the students began to show signs of integrating their prior histories, their current feelings, and the intellectual tasks of the course. They were more able to come up with personal but relevant examples, more able to hear the teacher's needs which, while perhaps pressing them in ways they did not wish to go, still seemed understandable. Mutual concessions were made for the ordinary, human reason that people's feelings were involved.

The teacher as person has before him the task, among other things, of conveying to the students his version of the struggle which, as facilitator, he is validating in the students. The unique, even accidental reasons, for choosing his field or for preferring one theory over another are part of what really makes up a particular teacher. The teacher's fears that his students will enter the next course without the necessary training are not just part of his capacity as formal authority or socializing agent. Perhaps, he begins to suspect, his own feelings are a legitimate part of the group, at least for some students. The end result of this late development is easily distinguished from friendship, but the relationships do seem warmer, more honest perhaps, and clearly a source of pleasure to many of those involved. That these positive feelings are recalled so vividly two years later is another sign that the people behind or within the roles came to be touched by what was going on.

The teacher and work. The major use we would not like to make of the one by one summaries of the obstacles to each aspect of teaching and learning involves the question: "What is the teacher's contribution to the development of work in the classroom?" We would hope that by generalizing across the various aspects of teaching, we could arrive at what must of necessity be a tentative set of thoughts on the effective college teacher. It would be pleasant to assume that our findings on small classes have direct bearing for the teacher who sees students only in large lecture halls, but we shall try to restrict ourselves to situations in which inter-change between teachers and students is a more distinct possibility.

Despite its self-evident quality, let us begin with the assertion that the teacher's contribution to work is a matter of skill. To say that teachers vary in skill has come, we hope, over the course of our discussion thus far to mean not a single skill but a composite of many, often unrelated skills. We have suggested that at least six rather distinct aspects of teaching can be identified, the six outlined in the teacher-as typology. The teacher's skill, then, would include at the very least the ability to contribute to the realization of each of these goals while at the same time managing to arouse, in himself and in the students, as little disruptive affect as possible. Our first approximation to a description of the effective teacher would involve specifying the various qualities of competence and fairness, the teacher's ability to connect the student with his present capacities and his future goals, as well as the qualities of enthusiasm and authenticity he manages to convey. To the extent that the particular student is sensitive to excesses or deficiencies in the teacher's performance as expert, formal authority, and so forth, the teacher's lack of skill will be directly translated into potentially disruptive affect and the learning-teaching relationship may begin to break down. Conversely, the teacher's skill can be seen either as arousing positive, task-directed feelings and needs or as permitting the group member to turn potentially disruptive effect into a source of energy for the tasks at hand. Thus skill must be seen not simply as the tendency to arouse no disruptive affect but as the ability to know what to do when it does arise.

Much of what we have found out about the students suggests that different sub-groups are very likely, no matter what the teacher does at first, to experience their characteristic forms of distress, irritation, or unproductively positive and submissive feelings. Given the momentum created by the diverse histories of the students, and given the teacher's own momentum and concurrent experiences, we conclude that an expectation that potentially disruptive affect will soon be part of the total process seems very much in order. The question for the teacher is what then to do about it.

There would seem to be no better time than right now to discuss explicitly a matter derived not only from the data but from the general dialogue among college teachers in many settings. The question can be phrased in such a way as to connect it with our current concerns, to wit: "Is it suggested or desirable, given the evidence that both the teacher and the students are experiencing all these emotions, that the classroom should resemble in its goals and procedures group psychotherapy or T-groups?" We wish to present a series of answers to this question, but the overall answer is definitely not, especially not with respect to the goals.

The major differences between, for example, the introductory psychology classes we have studied and the self-analytic and/or therapeutic group lies in the relative importance and legitimacy of the didactic or content goals, the goals of self-expression, and the values of self-awareness. There is no doubt that people can "learn" things in therapy which they could also learn in a course, just as in an introductory course they can express and become aware of feelings which they could also work on in T-groups. The question is one of priorities, and to speak of priorities means inevitably to speak of that point when one abandons a lesser goal, however worthy in and of itself, in favor of a more important or legitimate goal. The role of self-expression and insight in the traditional content course must be judged in the light of their contribution, positive or negative, to the complex teaching tasks which range all the way from the teacher as expert to the teacher as person. What we have tried to show in this study is the spectrum of teaching functions and the need to keep them in balance, and one clear finding was that as the expert functions were abandoned, what was created was not simply a breach of the educational contract but a whole series of affective consequences of major importance to the group. Thus the reason why we would argue that the goals of self-expression and self-awareness should not eclipse the intellectual goals of the course is that evidently neither the teacher nor a goodly share of the students find that situation to their liking.

How then can the teacher play a role in the reduction of disruptive affect without "turning the class into a therapy group?" We have already suggested that he would be ill-advised to make self-expression and insight the major goals of the classroom, but that does not imply that these are illegitimate activities and gains in any classroom, if they serve, rather than replace, the task. Why encourage students to express their feelings? To know what is on their mind. If the teacher doesn't know what he needs to know in order to alter an unpleasant or an unproductive situation, it is not "doing therapy" to find out. He may or he may not need to be explicit about it. He may get the message without it being spelled out in so many words. If a cluster two student is sinking further and further into a sense of intellectual inferiority, does he have to write his feelings on the blackboard? Does he even have to experience these feelings in all their full intensity? We think not; in a therapy group, perhaps, if the time were ripe, but certainly not in a classroom. The question is whether the teacher knows what he is feeling, and maybe it would be useful to hear something from this student in order to sense what underlies that look which says that things aren't going too well at the moment.

Once the teacher has found out what the students are feeling, by whatever means, the divergence of the classroom from the self-analytic group becomes even clearer. The teacher's goals, unlike the therapist's, typically, may be far better served by trying to change the disturbing reality, with the students help, than in soaking in it until everyone is fully aware of how disturbing it is. By stating, and trying to make consensual, new goals, unmentioned options, and alternative procedures, the teacher can often reduce the disruptive affect without having ever made it public to the class. He is not alone in this task, and in the end it is the group's capacity to innovate, to create areas of freedom and appropriate challenge, which distinguishes the successful class and its problem-solving ability.

While we are on the point of how the teacher might go about reducing the level of disruptive affect, it is important not to seem to be suggesting that reduction of the level of affect per se is the only goal. We are talking only of disruptive affect. Many skillful teachers can arouse massive amounts of anxiety or set up a competition which channels some students raging anger, and the consequence is not less work but more. When all is said and done, the reduction of affect is perhaps a less important goal for students or teachers than the development of ways to bind in and/or utilize these affective states. There is a pride which follows upon the discovery that one was not, contrary to previous experience, totally prevented from being effective by the fact that one was mistrustful, angry, or discouraged much of the time. To be able to bind in and tolerate previously overwhelming amounts of affect is a genuine human accomplishment, and without ever making this goal explicit, perhaps not even to themselves, many effective teachers manage to create whatever it takes to make this accomplishment possible. We suspect that one thing it takes is the class be "worth it," and this implies that at least some and perhaps all of the various teaching functions be handled with the skill of an effective professional.

Before concluding this review of the process of learning to work we wish to draw out of the several discussions of the obstacles to work some of the other common characteristics which characterize effective teaching. We wish to discuss, in order, the teacher's sense of balance, the teacher's commitment to reality, his sense of the likely, his sense of timing, and the appropriateness of his strategy for the particular student at the particular moment.

One characteristic of the later sessions in especially the more successful classes was the extent to which the teacher and the class could move flexibly and easily from one to another of the various functions of the educational relationships. Each brief segment seemed both to fuse far more effectively than earlier the deverse tasks and also to give way more gracefully to some other, needed function. This stands in striking contrast to the early sessions when the teacher seemed trapped by the either/or's of his own creation. Convinced that one could not control the class as a formal authority and at the same time be a good facilitator, that one could not be a good expert and a good ego ideal, or whatever see-saw they had constructed for themselves, each teacher resembled the child who despairs of ever playing the piano with both hands. Back and forth they would go, often fully convinced that their either/or was some kind of immutable condition of existence. Similarly, they acted as if to talk about the content were incompatible with the expression of affect. Of course, the students often acted as if they too shared their teacher's, or to put it more accurately, their culture's compartmentalizing inclinations. The "good-for-you" stuff before the dessert, serious work precludes fun, familiarity breeds comtempt (or at least the opposite of respect)—all the learnings about what-cannot-go-with-what is revealed in the early sessions. Gradually, however, the possibility of both, the possibility of inter-lacing and even fusing seemingly antithetical goals seem almost real. Work, it would seem, involves a creative solution to the either/or's which forces the teacher and the class to resign themselves to periods of first this excess and that deficiency, interspersed by confusing shifts to the opposite, but not much happier, alternative. Perhaps more experienced teachers know this, and perhaps they can avoid these erratic, zig-zagging developments. And, then again, perhaps it needs to be learned over and over again with each new class.

The second theme we have suggested to be an integral part of work is a sense of commitment to reality. We suggested above that work did not necessarily mean that everyone poured out his most humiliating and poorly controlled feelings, but this was not in the least to say that the teacher's sense of reality was an insignificant part of his contribution to the group's development. The teacher who conveys to the class a picture of the students which departs drastically from their own view of themselves, or who seems to be deluding himself about his own motives and feelings, is a serious detriment to work. When the teacher overpraises the class in order to calm his own misgivings about granting them freedom, many of the students are more disturbed than reassured. When the teacher's commitment to reality extended only to his insistence that the students be tough and face the reality of the ubiquitous unconscious or the reality of America's disastrous foreign policy but stops short of accepting the reality of the student's (or his own) feelings, what does the student learn about facing reality? Be that as it may, we are struck with the invariably negative consequences of pretense in the classroom.

The teacher's pretense that he trusts, respects, or likes the students seems seldom to last against the counter-pressure of reality. His actual feelings keep on coming through, and pretense cannot obliterate scorn, or indifference, or even the teacher's own distress. Fortunately, these states do not inevitably last forever. The point we are reemphasizing here is the relative ineffectiveness of rushing the class into structures and latitudes which are bolstered only by distortions of the current state of affairs. Not only is the teacher peddling denial as a preferable mode of handling feeling, instead of expression and/or semi-deliberate control, he is usually not very likely to succeed in his venture.

Reassurance ("Yes, I know this new procedure seems odd, but I'm confident it will seem OK in a little while") and the effective use of problem solving to address the realities of the situation are quite different processes than denial. It is particularly important, to the extent that it is possible, that the members of a class, including the teacher, have the sense of having solved the problem facing them not by a stroke of luck but by a process of fitting the solution to the realities as they existed. In the more succesful groups the various innovations, the various compromises, seemed to most of those involved like particularly appropriate decisions, and they could feel pride in both the process and the outcome of their deliberations.

A third and somewhat different point to make concerning the teacher and work involves the fact that in the classroom, as in all other human activities, things often don't quite work out the way one expects them to. The inexperienced or unskilled teacher is somewhat like the general whose fantasies about how easily his troops can capture a certain village lead him to hold no troops in reserve. Then when complications and counter-pressures arise, he is confused and panicky, So too with the teacher whose intentions to cover x, y and z in a given week are not joined with a sense of what is likely. Keeping behind no psychic reserves to deal with the residual resentment from the previous week's exam or the counter-pressures from those who cannot stomach the hidden value position underlying x, y, and z, he is left with too little energy to deal creatively with the situation. If this fine-grained analysis has convinced us of anything, it is that the teacher's intentions, whether they be to get across a certain chunk of material or to get a good discussion going, are only part of the picture. The early sessions, especially, are so filled with distressing and unexpected messages, caused only partly by what the teacher has said and done, that we suspect quite a bit of the early role dissatisfaction and general malaise stems simply from how unprepared the teacher was for all this complexity. While we are not knocking optimism, there is a line between optimism and naiveté. One had better be prepared at least for one's content (or Freedom, or whatever) goals to be shaped by the likely but unknown affective realities of the new class.

Finally, we would like to underscore again the one theme which has been hammered on more than any other in this study: the fact that groups develop. The teacher's contribution to the process of work is inextricably bound up with his sense of when which student or students can hear and respond to what. At least in these classrooms, and we strongly suspect in most others as well, the students in the early sessions are so preoccupied with their special concerns, their Sine Qua Non's of the educational process, that many messages directed at them are either ignored or reinterpreted to fit into quite a different meaning system than the one used by the teacher. For most students the first and primary meaning system has to do with the authority issue, but this is hardly uniform. The teacher who in the first session attempts to impress the students with the fascinating issues in his field may, as we have seen, accomplish nothing more than to convince some students they will surely flunk the course and others that evidently the teacher wants to start the power struggle on the first day.

In our consideration of one after another of the various aspects of teaching we found it necessary to describe many of the teacher's early efforts to reduce tension or increase participation as premature. And we meant here not only that the students were not ready; perhaps more often it was the teacher who was not ready. The teacher's feelings go through evolutionary changes, and what is right at a later time emerges as false or contrived at an earlier time.

We have tried to break through the notion that any teaching style, any goal or structure, is superior to any other independent of the current and changing realities of the classroom. Fortunately for other participants, the two more successful classes found their way slowly and via some unlikely detours back to the very goals and functions which had seemed so premature earlier. Not that these earlier failures were without consequences. To name but a few, the directness of the confrontation in class C had a liberating effect upon the teacher and the major antagonists, but this was not visible for several weeks. The premature enactment phase in all groups set the stage not only for the teacher to reassert his right to lecture but for both the teacher and the students to have some sense of the student's still-developing competence and responsibility.

The evident inability of the teachers to establish a comfortable, effective lecture style early in the term is also a matter of timing. We are not suggesting that no teacher can ever avoid the apprehension and discouragement caused by the early student displays of contention, indifference, and anxiety over grades. If they can, they can. More power to them. The teachers in this study could not or at least did not, and for them the early phases reflected the welter of conflicting goals and feelings we have tried to summarize.

We are not suggesting, however, some universal unfolding of "first this, then that" crisis and stages of development. These four classes are far from identical, and we have each taught other classes which turned out quite differently from the developmental patterns sketched out here. What then would we conclude from these four classes?

We would assert that we have touched upon some of the major ways in which en route to an effective, working class the teachers and students can talk past each other, arouse and disturb each other, and generally block each other and themselves from reaching the various task goals. We offer these analyses more as a model for how classes can develop than as a blueprint for how they invariably do develop. The crisis one teacher will provoke, another will stumble into later, and another hardly at all or never. We are prepared to claim, and this is scarcely more than a hope, given the complexities of other schools and other student bodies, that the gradual development of the classroom group can be expected to touch at some of the nodal points we have discussed. The implication for effective teaching is less ambiguous, however, than the prediction of similar outcomes. Whatever the pattern of their development, there is a natural history to classrooms and only slowly, and usually with some pain, do human groups come to coordinate their goals, agree upon procedures, and find ways to respond to the various affects and pressures generated by the process of moving toward their various task goals.